On Pruning Trees at the Time of Transplanting.

HOW should trees be pruned at the time of transplanting? or should they be pruned at all? are yet open questions among planters. As the subject will at this season of the year be one of the most general interest, we propose to offer a few remarks on it.

The objects in view in pruning a tree at the time of transplanting are three-fold. First, *The removal of all bruised and broken roots and branches.* The necessity for this is obvious and indisputable: bruised and broken roots, when planted without being dressed, must decay and interpose very serious obstacles to the formation of new roots; they should therefore always be pruned off closely to the sound wood, and with a sharp knife that will make a smooth, clean cut, the sloping surface of which should invariably be on the under and not on the upper sides of the roots. In making the cut, the knife should be laid to the under side of the root, and drawn upward. The young roots which subsequently spring from the cut end of the root, as from the end of a cutting, strike downward at once, as is natural. The reasons for pruning off broken or bruised branches are equally obvious. A broken branch left on a tree will produce an unsightly and in some cases a dangerous scar; but if it be pruned off close to the body of the tree, or to a sound bud, the wound will soon heal over or a new shoot will be produced. It is very common, in pruning hastily, to leave small portions of branches without eyes. These, instead of producing new shoots, die off, and the new wood growing in around them produces unsoundness that in many cases brings the tree to an untimely end.

The second object in pruning is, *to mold the tree to the desired form.* Trees coming from the nurseries are seldom in the exact shape that the planter wishes. They have too many side branches, their heads are too low or too high, or they have some other defect which the knife must remedy. Now the question comes up, How far is it judicious to attempt the formation of the tree at the moment of transplanting? Several points must be considered. If the trees are standards for the orchard, and they happen to be somewhat slender in proportion to their height, it would be unwise to prune off *closely* any side branches they might have, because this would direct the future growth to the top, and urge the tree still further out of balance and proportion. In such cases, the aim should be to increase the growth of the *stem;* and this can only be done by retaining two or three good eyes or buds of every side shoot, or of a sufficient number of the strongest and best, and by reducing the attracting power of the branches at the top. The influence of this is seen in the case of forest trees planted in the street, where the entire head is sawed off at planting, and nothing but a bare pole or pollard left; the growth is thrown into the trunk, which soon becomes covered with new shoots, and increases its diameter rapidly. If the tree has been pruned up too high in the nursery, making the head higher than desired, a new head must be formed lower down by cutting back the tree; but whether it is better to

attempt this at the moment of transplanting, or wait until the tree has taken root, and is capable of making a vigorous growth, is a question. This is a point of some importance. We know that newly planted trees push but feebly at best, in comparison with those well rooted, and that the shoots produced the first season make a very indifferent frame work for the tree. We have considerable experience on this very point, and we have come to the conclusion that it is much better to defer the pruning which is to produce the final and permanent form of the tree, until the second year, or until the tree shows unmistakable signs of being well rooted, and in a condition to make vigorous growth. But care must be taken to preserve and encourage, as far as possible, young shoots with active buds on the parts where we intend to produce the new head; because *old* wood, in which the buds have become in a measure dormant, does not throw out branches with desirable rapidity and vigor.

If, on the other hand, the head be too *low*, the first impulse would naturally be to prune it up. But this demands some caution. Where branches of considerable size are pruned off, when the tree is transplanted, and consequently unfit to make much growth, the fresh surface of the wounds dry up, and do not heal over quickly, as when the tree is in an active and vigorous condition. Beside, buds are essential to growth; and if too great a proportion of them be removed at once, the power of the cells or sap-vessels is impaired, and they cannot transmit the nutritive fluids from the roots upward. The roots, too, lose their activity, and general stagnation and debility follow. The better way is to reduce the head by thinning out some branches and shortening others, especially the lower ones; and in the season following, or when the tree has fairly recovered from removal, the large branches may be removed and the stem formed higher up; the upper shoots allowed to remain having sufficient power to maintain the functions of the different parts of the tree in full force and vigor.

The third object in pruning at the time of transplanting, is, *to restore the balance or proportion between the roots and branches, which has been disturbed in the process of removal.* A transplanted tree, no matter how carefully or skillfully it may have been operated upon, has its system materially deranged. The roots may neither be bruised or broken, nor the fibres dried or injured by exposure; and yet the ordinary functions of the various parts, and their reciprocal action and influence upon each other, can not but be in a measure arrested for a time. The roots can not abstract nutriment from the soil, and convey it through the trunk and branches, to supply the demand of the leaves, until they have taken to their new position and emitted new rootlets or feeders. Until this takes place, the demand of the leaves must be supplied from the stock of nutriment previously laid up in the cells, just as we see young shoots subsisting for a time on trees that have been cut down or torn up by the roots. As long as any sap remains in the cells, and can find a passage to the leaves, the latter continue green and healthy; but as soon as the sap is expended, and the cells dried up, the leaves wither, and vitality terminates. Transplanted trees are, until re-rooted, in the same situation, nearly, as trees cut down or rooted up and left on the surface of the ground — that is, they must rely mainly on the sap existing in the cells

before removal. Now it is plain that the more of buds and leaves there are on a tree, the greater will be the demand upon its stock of sap or nutrition, and *vice versa*. Hence the reason for recommending to reduce the tops of trees at the time of transplanting. For this reason we can not transplant deciduous trees safely while in full foliage. Even Strawberry plants root better by having a portion of their leaves removed; and hence the use of bell-glasses and other contrivances to prevent evaporation from the leaves of newly-inserted cuttings. A tree transplanted with a small number of roots, or damaged roots, and a branchy top, will suffer from the evaporation of the leaves, just as a cutting with leaves would if it were freely exposed to the air, though perhaps not to the same extent. Some trees will bear planting with smaller roots and larger tops than others — such, for instance, as the Poplar and Willow, and all those that root easily and rapidly, and have large sap-vessels through which nutriment absorbed by the roots can pass quickly to the leaves.

But we must remember, too, that leaves are necessary to the growth of roots. It is true that new roots are formed in the absence of leaves. We can see this illustrated in the case of early autumn-planted trees or cuttings: yet these roots would not attain any considerable development, nor survive long without the action of the leaves; for these may be likened to the animal stomach, in which the indispensable process of digestion takes place. No matter how abundant or healthy may be the roots, or how liberal the supplies of nutriment presented to them, if the leaves be not present to draw it upward and assimilate or *digest* it, growth can not continue — the roots will cease to lengthen, and ultimately perish. This is forcibly demonstrated in the case of trees that have been stripped of their foliage by insects, or some accident, — the roots cease to grow; but as soon as new leaves begin to appear, new roots are formed simultaneously: and if one side of a tree be stripped of its foliage, the roots more directly in connection with that side will cease to grow until new leaves appear. In propagating plants from cuttings, it is necessary, in many cases, and indeed in almost all cases where young wood is used, to leave a certain number of leaves. Cuttings that root without leaves are those of a soft nature, having large cells or sap-vessels full of organized matter or tissue capable of developing roots and sustaining them until the leaf-action commences.

From all this we see how important are the leaves, and how easy it would be by excessive pruning to hinder rather than promote the formation of roots. There is a medium which should be aimed at in pruning, to induce growth after removal. If the roots are much injured, or naturally meagre or defective, a very small number of active buds should be retained, just sufficient to stimulate and sustain circulation of the fluids. In such cases it may be necessary to cut back every young shoot to one or two eyes. Where the roots are abundant and sound, it will suffice to cut out the weak inside shoots, and shorten the stronger ones about one-half. In doing this, a large number of buds are removed, and whatever force there is in the tree is thrown into the remaining shoots, and young wood will be formed where we should have had nothing but leaves if the tree had not been pruned. The growth of young wood always favors the formation of roots. If we examine trees now that were transplanted

last spring, we shall find that the roots are in proportion to the number and strength of the young shoots.

The great object in pruning to promote growth is *to direct the sap into a smaller number of channels, and thus increase its force.* If a tree, for example, has 500 leaf-buds to draw upon its sap, and we cut away 400 of them, the remaining 100 will of course receive a far greater proportion than they would have done, and will consequently be enabled to make new wood; and experience teaches us that young shoots with their large cells, luxurient leaves, and great vital activity, act far more powerfully on the roots than the small, lean foliage of trees merely living but not growing. We know how cutting back acts upon stunted trees. A three or four years old Apple or Pear tree, for example, if cut down nearly to the ground, will, in one season, make a growth equal to that of two or three seasons under ordinary circumstances; and this is simply because its whole vital force is concentrated in one point. The sap rushes there, and large cells are formed immediately, in which a rapid and powerful circulation takes place.

All operations upon trees should be performed cautiously, because whatever produces a sudden or violent change in their condition, cannot fail to be attended with a derangement of their wisely and beautifully adjusted organization, and this derangement must be more or less injurious to their healthy existence. Every man who takes his knife in hand to mutilate a tree, should bear this in mind, and weigh carefully the consequences of every cut. We intended to have referred to the opinions of experienced and skillful arboriculturists on this subject, but we can not at present devote more space to it. What we have said will, we trust, induce reflection and observation on the part of some who have heretofore been too indifferent.

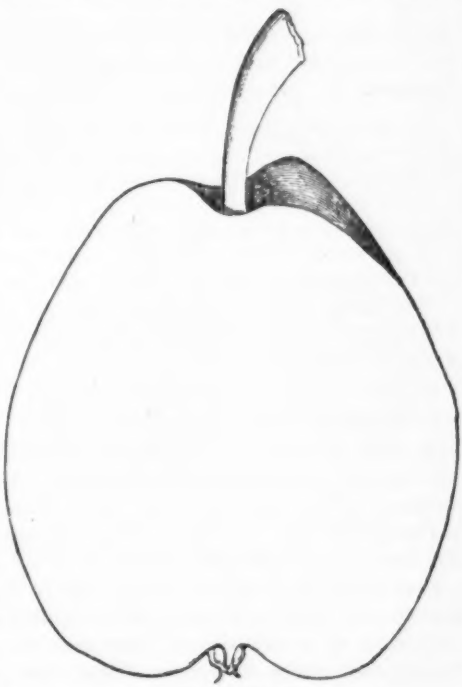
THE EASTER BEURRE PEAR.

Synonym: *Doyenné d'hiver*, the popular French name.

The culture of winter Pears has hitherto been much neglected. We are surprised that some enterprising cultivators do not plant extensively. Our large cities would consume immense quantities, and they would command greater prices than any other fruit. One reason why they are not more cultivated is, we presume, that they require more care and labor to prepare them for market. The autumn Pears, such as the *Virgalieu* (*White Doyenne*), can be picked from the trees and carried directly to market, while the winter varieties would require to be stored away for a length of time, and house-ripened. And then the supply of autumn Pears is still small, and prices as high as cultivators can reasonably desire. We suppose that we shall not witness any extensive culture of the winter sorts until Pear culture in general has become much more extensive and better understood. There are intelligent amateur cultivators, not a few, who even at this day express a disbelief in the existence of really fine, melting, winter dessert Pears. Not one in five hundred, or we may safely say

five thousand, of those even who have gardens, has yet tasted a fine *Winter Nelis*, a *Lawrence*, a *Beurre d'Aremberg*, a *Glout Morceau*, or an *Easter Beurre;* yet these are all delicious, melting Pears, that will ripen in a good dry cellar without any extra care or attention whatever.

The *Easter Beurre*, which we present as our frontispiece, is a noble fruit—by far the finest, as we think, of all long-keeping varieties. That it has attracted so little attention among amateur cultivators is really surprising; for it succeeds well here—quite as well as in France or Belgium, as far as we know of its being tested. The Pomological Society has not recommended it in any way, while they have placed on their lists other varieties of incomparably less value. For a few years past, however, it has been pretty well disseminated by the nurseries, and we shall very soon have some results from different parts of the country. We think it a fruit peculiarly adapted to the south; for it seems to endure dry and warm weather exceedingly well here, neither shedding its leaves nor fruit prematurely; and then it would keep up a supply for the table for months after the autumn Pears are gone, even if it were not to keep till April or May as it does here in the north. We must say, however, that according to our experience, it is larger, of finer quality, and ripens better, when grown on the Quince than on the Pear stock; and this is the case in Europe, too. On the Pear stock the fruits seem not to receive a sufficiently liberal supply of nutriment to bring them up to the most perfect state; they are comparatively small, with large, gritty core, and instead of ripening off freely, and becoming buttery and melting, many of them shrivel and dry up, as Pears do that have been prematurely gathered. The *Duchesse d'Angouleme* is similar, to some extent; it is, according to our opinion, infinitely superior on the Quince. We therefore recommend its culture on the Quince stock, and that whether for market or for private use. The tree is a good grower, moderate at first, but improving every year, and finally makes a large, vigorous tree on the Quince; and



EASTER BEURRE PEAR.

if kept under high culture, it will produce annually very heavy crops. It has all the characteristics of a profitable variety.

Fruit — very large, roundish-obovate, often inclining to oval. Stalk — rather short, stout, and deeply inserted. Calyx — closed, slightly sunk in an irregular, plaited cavity. Skin — greenish-yellow, becoming quite yellow in good specimens, with numerous brown dots, and a brownish red cheek when exposed freely to the sun. Flesh — melting, juicy, with a sprightly vinous flavor. Tree — vigorous and erect, with bright reddish-brown shoots, sprinkled with russet dots. Leaves — large and folded. The wood of yearling shoots usually shows prominent buds or spurs on the lower parts the first season, and have a forked appearance by making a second growth, as the *Beurre d'Aremberg* and some others do.

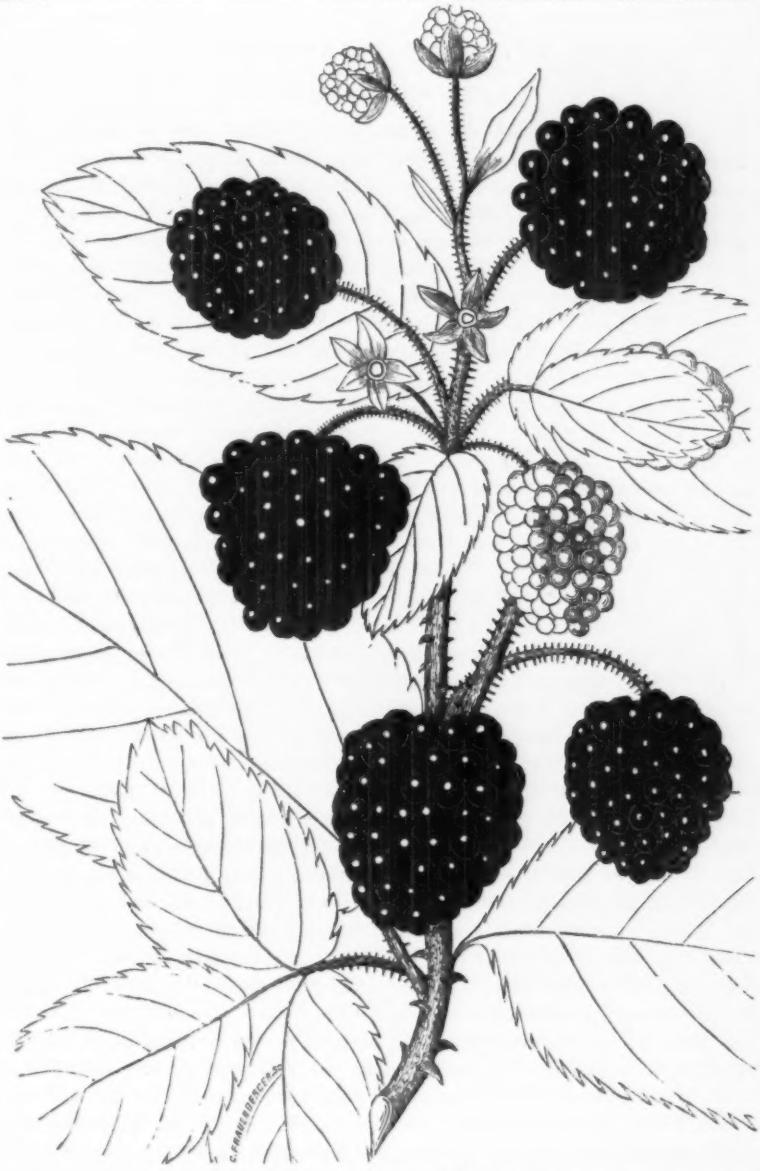
THE NEW ROCHELLE OR LAWTON BLACKBERRY.

Messrs. Geo. Seymour & Co., of Norwalk, Conn., sent us a colored drawing of this fruit, accompanied with the following observations on their mode of culture and treatment. We had the annexed woodcut prepared from their drawing:

"We prepare the ground by plowing and manuring as for any ordinary crop. We then take young plants, cut them back to within six inches of the roots, and plant in rows eight feet by four apart. The first season we use the plow and cultivator both ways between the rows, keeping the ground in good tilth. Next, or the second season, we train the plants into the four feet spaces, leaving the eight feet spaces for the plow and cultivator to work in. When the plants are five or six feet high, pinch out the leading shoot to induce the growth of vigorous side branches. In training, we prefer the bending mode to the upright.

"We regard this Blackberry as a very valuable addition to the list of small fruits, because it is so simple in its cultivation, bears regular and abundant crops, and when perfectly ripe is of a highly agreeable flavor."

We have only to add that from what we have seen and heard of this fruit, it cannot fail to be an object of very profitable culture within any reasonable distance of large cities. It ripens after Strawberries and Raspberries, and before Peaches, and therefore comes most opportunely as to season. And then its cultivation must be of the easiest possible kind — only give it rich soil, and keep it clean and well cultivated, and an abundance of large fruit is certain. No one need expect such wondrous large fruit, however, as people have witnessed at New Rochelle and Norwalk, in ordinary soil and with ordinary culture. Manure must be applied unsparingly, and the ground must be kept clean and friable as work can make it. The Blackberry matures in midsummer, when we have usually very warm and dry weather, and any neglect of the soil would render the fruits worthless. We do not forget how Col. Stoddard astonished people with the size of his *Alpine* Strawberries. It was thought he had a new sort, when in fact he merely cultivated a little better than others. *Rich soil and clean culture* are indispensable to the growth of large fruits of any kind.



THE NEW ROCHELLE OR LAWTON BLACKBERRY.

GARDENS AND GARDENING AT MONTREAL, CANADA.

BY A PRACTICAL OBSERVER.

A PROFESSION offering such rich materials, which almost every day are enlarged by new and interesting discoveries, opens a large field of study and labor, both to the theoretical and practical man; and we think that every one gifted in the least with a taste for natural beauty, should range tasteful gardening with the most beautiful of the arts. It is painful, however, for us to confess that our gardens — we mean those of the wealthier in this city and its vicinity — are, generally speaking, in a sad state in comparison with those of cities of the same dimensions in the United States. The want of taste is so prominent, that often the finest dwellings and villas are seen surrounded by miserable-looking, spoiled gardens, if not even in the midst of cabbage fields; which latter certainly, we should think, could not be considered as fit objects to ornament the immediate neighborhood of a fine building, and in our opinion it helps to degrade it; whereas, a garden handsomely laid out under tasteful principles would highly improve it, and give it an elegant appearance. We do not mean to do away entirely with the kitchen garden. We know even that under certain circumstances a culinary garden, properly placed, can be made both useful and ornamental, without in the least destroying the view in the immediate neighborhood of a dwelling; but to find out the way of doing so, we need to study a little of what we would call the poetry of gardening, which does not appear to be the task of the greater part of the proprietors of the Montreal gardens, which in many instances might be turned into delightful residences, if entrusted to the hands of experienced persons.

However, a few gardens are exempt from this general deficiency, and among these we mention first that of JOHN TORRANCE, Esq., St. Antoine street, where we find a very well kept and properly laid out culinary garden and very handsome flower garden close to the dwelling, which in the summer season is ornamented with some nice old specimens of greenhouse plants, and a fine collection of very pretty annuals. It is particularly worth visiting in the month of June, because of the fine collection and large specimens of Fuchsias which are then in full bloom, and to which the gardener, Mr. HOLDER, as a favorite plant of his, seems to devote particular attention, and indeed with the greatest success. During the winter season will be found in a suitable greenhouse a considerable number of New Holland plants, but, with few exceptions, in rather longish appearing specimens. In one compartment, apparently intended for the growth of stove plants, we find again a collection of the older genera of the tropics in general cultivation, with the exception of a few new and excellent specimens, which unfortunately are hid among Fuchsias and Azaleas, because the stove has to be used both as a forcing-house and stove; but we have no doubt that if Mr. HOLDER had a fair opportunity, he would show us something very superior.

The flower garden of Mr. WM. LUNN, Sherbrooke street, which is generally tastefully planted, is surrounded partly by long, well put up vineries, and a long but narrow green-house, where all sorts of market plants, such as Roses, Pelargoniums, Verbenas,

and other herbaceous varieties, are grown plentifully; but as the whole establishment is intended for market purposes, we see even in the flower garden French Beans, Raspberries, and other marketable fruits and vegetables, which must impress upon the mind of the visitor something less than a tasteful geniality. The spacious kitchen garden is planted with some fine bearing Apple trees of very good varieties. We purposely mention this garden among our first, because the people of Montreal think it one of their best, as they never find a want of vegetables there.

As for amateurs fond of seeing well-grown plants, we would direct their attention to the fine collection of JAMES FERRIER, Esq., under the care of Mr. TAYLOR, a very worthy young Scotchman, who deserves every possible credit for the zeal with which he endeavors to recompense the generosity of his kind employer. In an elegant conservatory, though not entirely suitable for the growth of plants, we find, particularly in the months of February and March, when Camellias, Azaleas, and some of his handsome New Holland plants are in full bloom, that no place is more worthy a visit than this. Among some of his finest green-house plants we only mention some very handsome Conifers, viz., *Araucaria excelsa*, *Cryptomeria Japonica*, *Cupressus funebris*, and several other smaller specimens, beside some elegant Acacias, such as *pubescens*, *armata*, *alata*, *grandis*, &c. But we observe, in a small stove which joins the conservatory, even some well-grown new and rare plants, as, for instance, that new and splendid creeper from Java, *Cissus discolor marmorea*, *Cephalotus follicularis*, *Begonia zanthina*, *Hydrangea Japonica*, *foliis*, *variegatis*, and several others. But we find the surrounding of the dwelling in the summer season in a rather desolate and apparently somewhat neglected state, because of its having been previously overplanted with trees, the roots of which seem, as is often the case, to have grown to the heart of the proprietor; so much so, that at present they could not be cleared away without affecting it severely.

Highly worth notice is the new garden, only since last year arranged, of one of the most tasteful and enterprising gentlemen in this city; we mean that of HENRY CHAPMAN, Esq., Durocher street. Beside a handsome little flower garden luxuriantly ornamented with the best annuals, herbaceous plants, hardy shrubbery, &c., we find a very well constructed green-house and stove, which is filled with the best plants of latest introduction; and as the young and industrious gardener, Mr. BERGHOLZ, a German, is a first rate propagator, we find all the newest varieties in great multitudes about the place; so much so, that his employer, as we learn, is inclined to sell or exchange the plants of which he has a large stock, which certainly will be a great advantage to those who are anxious to get the newest varieties and their correct names; and, in fact, we are aware of no place in Canada or the United States where propagation is conducted with greater care and attention, nor where it is rewarded with better success; so that even Mr. STUART LOW, a noted English nurseryman, at a recent visit to this city, could not help placing this establishment at the head of all those which he visited in America, as to the quantity of its new and well-grown valuable plants. The stock of New Holland plants is well supplied, and in good propagation, all nice bushy plants. The same may be said about the collection of herbaceous plants, among

which we may mention some of the new Phloxes, such as *Roi Leopold*, *Crytereon*, *Madam Lefevre*, &c., the finest and newest Chrysanthemums, Dianthus or Carnations, Dielytras, Bellis or German Daisies, &c. We notice, further, a handsome collection of Conifers, viz., *Saxe-Gothæa conspicua*, *Libocedrus Chiliensis*, *Abies Jezoensis*, *Araucaria*, *Cupressus*, &c.; a large collection of Acacias, and the newest and best Camellias and Azaleas. Most interesting is a visit to the stove, where we see at the entrance a small aquarium with *Nymphæa dentata*, *Ortgiesiana rubra*, *cærulea*, some *Pontederias*, *Andropogon Schœnanthus*, and several of the Cypericaceæ. Among the vigorous and carefully propagated stove-plants we find all the newest and best, such as several of the new and finest of the Ficus tribe; *Begonia Prestoniensis*, *miniata*, *xanthina*, *macrophylla*, *stigmosa*, &c.; the splendid *Aphelandra Leopoldii*, *squarrosa citriosa*, *Porteana*, &c.; *Dracæna nobilis*, *maculata*; large specimens of the elegant *Hydrangea Japonica foliis variegatis*; *Clerodendron Bungei*; the beautiful *Maranda Warszcewitzii*; the interesting Fly-trap *Dionæa muscipula*; *Cephalotus follicularis*. Among the various creepers the most beautiful *Hexacentris Mysorensis*; the finest of all the *Passifloras*, *P. Decaisneana*; *Hæmadyction nutans*; *Cissus discolor marmorea*. As for other fine showy plants, *Lopezia macrophylla*, *Musa coccinea*, *Quadrya heterophylla*, *Saurauja macrophylla*, *Pandanus graminifolius*, *Bresia Madagascariensis*, *Aloplectus Schlimmei*, are among a number of the finest flowers. Of the newer Gloxinias in vogue, *Achimenes Chirita*, &c. Mr. Bergholz, whose zeal and knowledge collected all these in not more than one year, deserves every possible credit, and we wish him every success in his endeavors to make Montreal a place where persons so devoted to the profession as he is may find opportunities to study and admire the vegetable kingdom in all its grandeur, in which task he is most generously supported by his kind employer.

There are several other gardens known as fine in Montreal, the economical display of which, however, is so prominent, that we forbear expressing our opinion upon them. We can not, however, refrain from mentioning the highly creditable and oldest nursery and seed establishment of Lower Canada, that of Mr. George Shepherd, a person known among his fellow citizens as one of the most honest and industrious of men, who by his steady perseverance has as yet been the only individual who has turned nursery-gardening in this rigorous climate to any profit. We find him always ready to aid newly-arrived young gardeners, and gentlemen applying to him, with the most practical advice about everything relating to gardening in this country; and his general and thorough knowledge of his profession makes him the most able to do so. In his nursery at St. Catherines, near the foot of the mountain, we find a fine stock of the best varieties of keeping Apples suitable for this climate, in young, saleable trees, with a collection of all sorts of shrubs adapted to this country; and in his store, 33 Noter-Dame street, garden and field seeds, either of his own raising or imported from some of the best establishments in Europe. Lately the Messrs. Cockburn & Brown have established something similar, and seem not to be afraid of any expense in increasing their stock by considerable importations of fruit trees, shrubbery, and Roses from Europe and Upper Canada. Since last spring they have opened also a seed

store; and we wish them the good success which we wish to all gardening around Montreal.

[We publish the foregoing letter from a practical and observing man who feels interested in the state and progress of gardening around him. We must say, however, that some of the criticisms on gardens are not exactly to our taste, though we do not dispute their correctness. We have not been in Montreal for some years, but we remember, when there, being forcibly struck with the taste and good keeping of many gardens, and especially with the excellent vegetables shown in market. We think that, considering the rigorous climate of Montreal, her gardens will compare not unfavorably with any American city, and in private green-houses she is in advance of any other of an equal population.—Ed.]

REMARKS ON GRAPERIES AND GRAPE-CULTURE UNDER GLASS.

BY JAS. COWAN, GARDENER TO J. H. RIDGLEY, ESQ., HAMPTON, BALTIMORE, MD.

Construction of the Vinery.—Instead of the common practice of building the front wall of the house on pillars, I would advise that a solid wall from the foundation be made, as I consider an inside border to be more injurious than beneficial to the roots of the vines. The principal cause of the shriveling of early-forced Grapes is, in my opinion, owing to the roots being over-heated, and not having sufficient moisture. When they extend far into the interior of the house, it is impossible for even the most experienced gardener to guard against this completely.

Having given my objections to an inside border, I may add that building a wall will be found a saving of expense. I consider upright sashes of little or no use in front, and I would recommend the back wall to be built much higher than it commonly is, as the vines always fruit best at their extremeties. I would also have the pathway of the house paved with stone, which would certainly look much better, and be less expensive in the end. Where there is only one house to be erected, it would be much better to have it made circular in front, as it would be more exposed to the sun's rays.

With regard to the construction of the heating apparatus, I would recommend the hot-water instead of the smoke-flue system, and the use of Week's Conical Boiler. Although it is generally allowed that many a good bunch of Grapes has been grown by the heat of an old smoke-flue, the hot-water system is universally adopted in all new vineries throughout Great Britain. Week's boiler is formed of 2½ to 3-inch pipes, all connected, with the furnace in the center. The body of water being small, and the surface of pipe large, the water heats soon, and circulates rapidly. I would also have the furnace or fireplace made much larger than is usual, so as to afford sufficient space for a large, slow-burning fire, in order that the operator may have it in his power to keep a steady heat in the house. When the fireplace is small, he has to stir it often, to keep up the desired heat in cold weather.

FORMATION OF THE BORDER.—The site on which the house stands has a gradual inclination to the south, twenty inches in thirty feet, which is very desirable, in order to carry away rapidly all superfluous water. The border is fifteen feet wide and three feet deep; it is dug eighteen inches below the original surface, and raised as much above. In the bottom are placed twelve inches of stones, to form drainage, and these are overlaid with some rough material, vegetable matter, or turf, to prevent the earth from adhering to them. The earth which forms the border was the top-spit taken from the corner of an old pasture which the cows frequented, and which was undoubtedly very rich, mixed with a goodly quantity of well-rotted animal dung (I believe cow-dung to be the best), together with a liberal quantity of bone-dust or something equivalent. I also approve of having a drain along the border, near the center, on a level with the stones at the bottom of the border, open at each end, in connection with several intersecting ones, into the interior of the house, in order to dry and convey a current of air through the border, which is most assuredly beneficial to the growth of vines. I am much in favor of having some rough material mixed with the earth in the border, such as old lime, limestone, or broken bricks, to keep the soil loose.

PLANTING.—Of course choose good, healthy vines. It is necessary, when planting, to lay the roots in some nice light earth, say a mixture of leaf-mold and white sand. White sand answers the purpose best, because it is free of oxide of iron. Particular care must be taken not to plant too deep, as nothing is more injurious. The point of divergence of the ascending and descending axis—that is, of the root and stem—should always be even with the surface. I would have good, strong vines planted about six or ten inches from the outside of the wall, and introduced through holes made in the building six inches above the surface of the border, and from four to six inches in diameter, with a projection toward the inside. It is customary to plant a vine for each rafter. I prefer one in the center of each alternate sash, in order to grow one rod for each rafter in the house, as the less the roots are interwoven with each other, the better.

I have an abundant supply of water during the warm weather, both inside and out,—the former to keep down insects, which are very numerous in this country, and the latter for the use of the border. I have been in the habit of syringing in the early part of the day, instead of the afternoon—say about eight o'clock, in clear weather; and in dull, cloudy weather, the operation was omitted. During the absence of rain, I thoroughly soaked the outside border about three times a week, which border has an excellent covering of strong cow-dung, which greatly increased the vigor of the vines.

Forcing-houses should receive air as frequently at the front as at the top; and when air is admitted at the front, it should be at ventilators opposite the pipes or flues, in order to have a circulation of heated air through the house, resembling that of their native country.

PRUNING.—I consider this one of the most important operations in the management of vines. There are various methods adopted by gardeners, with equal success; but there is undoubtedly one system superior to all others, and perhaps that has not

yet been ascertained. However, there is one way of pruning the rod like a walking-stick (the renewal or long cane system), and another with spurs of one eye or more. The vines here, that I am alluding to, were pruned in the former way, and have done remarkably well this year. I measured some leaves of the *Black Hamburgh*, which I found to be 13 by 13 inches; and those of the *Muscat of Alexandria*, 13 by 14 inches, and wood three inches in diameter, of this years growth, and fruiting uncommonly. The bunches of course are not large, which could not be expected the first year. One bunch of the *Royal Chasselas* measures 12 inches in length, and several berries of the *Black Hamburgh* measure 3½ inches in circumference.

GRAPES AND ROSES.

BY WILLIAM H. SCOTT, ADRIAN, MICH.

A CORRESPONDENT from Michigan asks: "Why is it that some of your Rochester pomologists so set up the *Clinton* Grape?" adding, that it is hardy and prolific; and that is all he can say in its favor. To say that a *moderately* good Grape is hardy in all of our northern States, is what can *not* be truthfully said of any of the most noted sorts—the *Catawba* or *Isabella*, for instance. It *can* be said of the *Clinton;* and because it is very comfortable to have the second best when the best fails, the Rochester pomologists, or the Michigan pomologists, may well recommend the *Clinton*. During ten years observation of the habits of this Grape, I have several times seen large vines of the *Isabella* nearly killed to the ground by autumnal frosts, while the *Clinton* remained quite uninjured. The latter has never failed to produce large crops. There is something foxy in its flavor, especially if not thoroughly ripe; but it has much less pulp than the *Isabella*, and is wanting in that peculiar slimy coating that envelopes its pulp.

The *Catawba* is seldom ripened here on trellises. In this latitude it should always be grown upon close walls with a southern exposure. I am so thoroughly convinced of the superiority of this mode of culture, that I will have no more training on arbors or trellises. Grapes trained on the walls of my buildings are quite two weeks in advance of my neighbors' upon trellises. The *Alexander* is so much better when cultivated in this way, that a noted pomologist failed to recognize the fruit, although he had long been accustomed to see it cultivated in the best wine region of the States. Notwithstanding the past winter was a very trying one, not three inches of the extremities of the large vines growing upon the sides of the barn were affected.

This has been a hard season for Roses. The June bloom was a good one, but the Perpetuals have suffered from long drouth; and now, while they should be making a good display, are almost roseless. Among a not very large variety—say twenty kinds—I have found quite a diversity of good qualities. For several years the *Prince Albert* has played treacherous in its June flowering. It has shot out its plump buds early, numerous, and full of promise; but while my expectations were

fully awakened in view of the plump, healthy Rose just at hand, the partially-developed bloom either refuses to go further or blasts;—not one really good Rose on eight or ten standards. But later, when June Roses are gone—when the *Prince* has lost all his plebian companions—he deigns to put on full costume. Through July, imperfect specimens of this Rose have been as difficult to find as the perfect were in June. In a season usually moist it has continued to bloom faithfully until severe frosts. In the smallest collection of Roses it should be one. The *Madame Laffay* has bloomed better early, but not so well late in the season as the *Prince Albert*. *La Reine*, though large and very showy, has not been a reliable bloomer. A large, bright, double, cherry-colored Rose, which I suppose to be *Duchess of Sutherland*, is a great favorite with us all. It is a free and continuous bloomer, and in most respects better than the *Laffay*. The *Marquis Boccella* is a good Rose of its color—quite pale pink—and does very well to make variety of color with the darker Roses, say with *Prince Albert* and *Geant des Batailles*. I have not had uniformly well-developed Roses of the *Boccella*. Among the semi-hardy Perpetuals, I could poorly dispense with the *Solfatare* and *Amie Vibert*. Among all the Perpetuals, none have bloomed so profusely, during many years, as the latter. From the beginning of the Rose season to cold weather, it often bears as many as fifteen or twenty Roses at one time, on its long, forked stems. The *Amie Vibert* should have a good background of green, as it lacks leaves. The *Solfatare* is somewhat more tender here. It is the best of the cream-colored family of Roses, and certainly one of the best of all Roses. A thick covering of evergreen boughs is all the winter protection it ordinarily requires. Two years ago last winter, I nearly smothered my best bush with covering; last winter being more trying, I had nearly lost it by following the opposite practice.

With two or three exceptions, my Roses are budded. Several years' experience in Rose-culture has given me no inclination to resort to varieties on their own roots. Nurserymen have repeatedly warned me of the danger of budding, and especially of its want of permanence. In a moderate amateur collection, like mine, budded Roses have many advantages. Usually the Rose roots sent out by nurserymen are rather puny affairs; and, while some of them *never* get large enough to make much display, others are long enough about it to quite weary one's patience. There is little difficulty in finding stocks of the common *Blush* Rose to bud upon; often quite strong ones may be got. It is often quite an object to get a bloom the first year; and if the season is at all propitious, it may be attained by budding late in June, and heading down so soon as the inserted bud shows signs of bursting. During the last ten years I have cultivated a variety of the best Perpetuals upon such stocks, and have not yet found one to fail, either in health or vigor of growth. With slight attention in providing one good stake to support the bush, there is little danger of the top parting from the stock. And this provision must be made, too, for the Rose on its own roots, if the Roses are to show well. It is objected that the standards so got do not last well. I can show budded standards, some of ten and some of twelve years from the bud, apparently quite healthy yet; and I hope to keep them so much longer, by proper attention.

Chip-manure I have found the most universally applicable for the Rose. If only partially rotted, it is somewhat unsightly on the finished lawn, yet it is one of the most efficient of mulchings.

For the sides of a building, the *Multiflora* makes a reliable stock for all the hardy Roses. What more beautiful than the display that may easily be made by a variety of choice Roses on a veranda, or under the roof of the cottage. Of course a climber of such dimensions, if made to depart from its constitutional habit of once-bearing, can not be induced to bloom perpetually without high feeding. When the barn is so placed as to warrant it, it affords an excellent position for a climber of Perpetual Roses. The roots running under its floors will find abundant nutriment.

NELUMBIUM SPECIOSUM.

BY J. G., SPRINGBROOK.

Many of the readers of the *Horticulturist* will doubtless be pleased to learn that the plant of which I have given the name at the head of this article, proved entirely hardy with us during the past winter, and has been for the few past weeks producing a succession of beautiful pink flowers. The plant is growing in a basin in the kitchen garden, which receives the overflow from the banks, and which is always thoroughly frozen over during the winter. The *N. luteum* is growing by its side, and is just coming into bloom, the plant having been set out this spring. A variety from the Island of Minorca is also growing in this tank. From the color of the leaves, being much lighter than those of the *N. speciosum*, we are in hopes that it will prove the *N. alba*, or some other variety not hitherto known to us. For the seeds of this latter, we are indebted to a lady of Mississippi, who kindly sent them to the proprietor of these grounds.

We have just coming into bloom, in our aquarium, the *Nymphæa cærulea*, received from Mr. Allen, of Salem, Mass.

The *Stanwick* Nectarine has just fruited with us; and I take pleasure in saying that it exceeds all others, of the melting varieties, with which we are acquainted, in regard to flavor.

Our original plant of the *Victoria regia* is somewhat in repose at this time, having a few weeks since produced, for the present, its last flower (208th). Having decided that it is a perennial, we propose, in a few months, to introduce a young plant into the tank, as a substitute for the old one, the latter no longer producing seed abundantly.

[We are much obliged to J. G. for the information. We are glad to learn that the *Stanwick* Nectarine proves so excellent.—Ed.]

NOTE ON THE CLADRASTIS TINCTORIA, (VIRGILIA LUTEA of MICHAUX.)

BY S. B. BUCKLEY, WEST DRESDEN, N. Y.

IN several numbers of the *Horticulturist*, and various nursery catalogues lately published, the *Cladrastis tinctoria* is called by MICHAUX's old name, *Virgilia lutea*,* which has been discarded by most botanists, because it is very distinct from a true *Virgilia*—a genus named by LA MARCK in honor of the poet VIRGIL. The name given by MICHAUX, in the infancy of our botany, proving to be wrong, RAFINESQUE formed of it a new genus—*Cladrastis*—in 1825, with the specific name of *tinctoria*, from the yellow coloring matter contained in its wood and roots. The authority of RAFINESQUE has been followed by ENDLICHER, in his *Genera Plantarum*, now acknowledged to be the standard work on botanical genera; and also by TORRY & GRAY, in their *Flora of North America*. There are three species of *Virgilia* cultivated in England, according to LOUDON, all shrubs, one of which is a native of Abyssinia, and two of the Cape of Good Hope.

I saw a fine *Cladrastis tinctoria* on the banks of the French Broad river, near Paint Rock, in East Tennessee, a few miles from the Warm Springs in North Carolina. It was nearly a foot in diameter, and about twenty-five feet high, with pinnate leaves, and very large, ovate, deep green leaflets, and flowers much like the common Locust, (*Robinia pseudo-acacia*). This was the only *Cladrastis* I saw during a botanical tour through Tennessee and among the mountains of North Carolina. I also have specimens received from Prof. SHORT, collected on Kentucky river. It is a rare tree, both in the South and South-western States, and seems to be rather rare in the nurseries. Last spring I was told there were none suitable for transplanting in any of the nurseries at Flushing, Long Island. I saw a few specimens in one of the hothouses of the Messrs. PARSONS, at the latter place, which were raised from the seed, and but three or four inches high, which I was informed were all they had.

While writing of the Messrs. PARSONS, I must add that there I saw thousands of Pines, Cedars, Firs, and other kindred families, growing from cuttings.† I supposed till then that all these genera had to be propagated from the seed, but there these future trees, from two to six inches high, were growing nicely in boxes of a sandy loam.

* *Virgilia* is the name in all nursery catalogues, and in most of the botanical works to which reference is more commonly made. The *Bon Jardinier* has it *Cladastris*, after RAFINESQUE. *Loudon's Arboretum*, and *Michaux's Sylva*, the two great works on trees, do not mention *Cladastris*. *Paxton's Botanical Dictionary* enumerates six species of *Virgilia*, all evergreen shrubs, except the *lutea:* one a native of Abyssinia, the others of the Cape of Good Hope. These are greenhouse plants.—ED.

† We think our correspondent must be mistaken in regard to Pines and Firs being propagated by thousands from cuttings, by the Messrs. PARSONS. It is not practicable to propagate either from cuttings on a scale of sufficient importance for a nurseryman, besides the plants so raised are of little value as compared to seedlings. Junipers, Cedars, Cypresses, Arbor Vitæ, &c., are grown successfully from cuttings.—ED.

THE HOLLY TREE, (Ilex opaca).

BY HORTICOLA.

The best trees, like the best people, are the rarest; possibly we attach more interest to the rare, both in trees and in the human species, by an unjust standard; yet in the former, the slowness of growth which adds to the value of the wood, and is apt to influence our estimate of beauty, is one cause of the scarcity of fine specimens among us. We are but young planters, and we want immediate effects. How then can we expect to find a large tree like the Holly, which requires no less than a century to bring it to perfection? It is rather a hopeless case, we confess, and yet we would fain advise every one who plants not to forget the Holly, the most beautiful of our native evergreens, its shape, color and form of leaves, and its ever ornamental berries considered.* It is slow to germinate, slow to grow, and difficult to move from the spot where nature placed it; and yet there is no reason to despair, if you begin right. As a hedge it has no compeer, and he who first shows a fine Holly hedge of some extent in America will be entitled to the thanks of all posterity, as well as his cotemporaries.

The Holly, like *Magnolia glauca*, adapts itself to the soil in which it is placed. In New Jersey, near the sea coast it thrives admirably in dry sand; in Maryland, in gravely soil; while in South Carolina, Georgia, and Lower Louisiana, it seeks shady places on the edges of swamps, where the soil is cool and fertile. In all these situations it is vigorous and enduring. The writer has lately seen, with extreme admiration, immense numbers near Absecom, in New Jersey, a new watering place of extraordinary capabilities, to which a railroad has just been opened from Philadelphia. Some of them are undoubtedly more than a century old, and growing close to the edge of the boundary of the sea; exposed to all the fury of the north-east winds, they have been blown into fantastic shapes at the tops, but have firmly resisted the awful storms which make that coast the dread of the mariner.

The difficulty of germinating the Holly seeds may be overcome with skill and knowledge; probably the recommendations in Michaux's great work on American Trees are the best; but there are doubtless other methods, such as the use of hot water, and passing them through the stomachs of domestic birds, to rid them of their viscous covering, which would be efficacious. The writer has succeeded best where considerable moisture was regularly present. In one instance a large quantity was planted in the bed of a grapery, and in two years after only a few came up; these it was observed were under a drip of the glass, which was imperfect, and in no other spot did they vegetate—a fact suggestive and important.

* In making some garden calls a few days ago at Astoria, in company with Mr. Hogg, we were shown a beautiful Holly tree, a perfect cone about eight or ten feet high, every way as fine as any of the size we have seen in England. It was standing in an open exposed situation, and appeared quite at home in it. The time for the Holly and other such slow growing trees has scarcely arrived yet in this country; planters have been impatient; Silver Maples, Pawlonias, Abeles and Ailantus, have been more in demand. This arose from the necessity of having shade and shelter, in new places. The Holly is a luxury in ornamental gardens, and like other luxuries will be sought for only when necessities are satisfied. — Ed.

The mention of *Michaux's Sylva* reminds us to say that a new edition of that invaluable work has been called for by the public, and is just ready for issue. It is entirely indispensable to the student of arboriculture, and having the advantage of new American notes, it is becoming the *vade mecum* of all who plant. The newspapers herald the advent of a JENNY LIND or a GRISI, as evidence of our social advancement and liberality in the expenditure of money; they puff away at these and similar surface polishings in perfect ignorance of this great book, which is penetrating to our most distant settlements, and diffusing taste and information where GRISI and MARIO can never teach, and where its *results* will live for the admiration of future generations when the very names of "dear Jenny" and our present visitors will be forgotten.*

We cannot but wish, sometimes, that our newspapers would devote a little corner to country affairs; we should so like our visitors from the great cities when they come to see us, to know a Willow from a Deodar, or even a Larch from a Pine; but no! they go on from generation to generation, in entire ignorance of what constitutes rustic beauty and ornament; they travel thousands of miles to get a peep at some landscape from a mountain height, the ingredients of which, its geological and arboricultural treasures they are entirely ignorant of. How much *more* pleasure would they enjoy, if they had instructed themselves to observe and admire the beauties of nature. We, as a people, know too little of Astronomy, of Geology, and of Botany; and we shall so continue till our teachers of youth know something themselves of these sciences. It is too amusing to see our city teachers with their scholars on a pic-nic in the country; they cannot tell the young and inquiring youths the name of a single tree, unless indeed, they find chestnuts, or acorns beneath them! This *must* be altered; no teacher should pass an examination at a Normal School, unless he can tell a Currant bush from a Magnolia, when neither have fruit or flower.

THE LILIUM THOMPSONIANUM, (DR. THOMPSON'S LILY).

WE find a colored drawing and a description of this Lily in the *Flore des Serres*. It was discovered more than thirty years ago, by the celebrated Dr. WALLICH, or by collectors in his service, in the mountains of Gossain-Than, and Kamaon, and rediscovered a long time afterwards by Dr. ROYLE, at Mussoree. It bloomed for the first time in Europe in the greenhouses of Messrs. LODDIGES, in London, in 1844, and the specimen from which this drawing was made, in the Kew Gardens, in April, 1853. It was produced from seeds collected at Almora, 8000 feet above the sea level, by Messrs. THOMPSON & SETRACHEY. DR. ROYLE placed it among Fritillaria, but

* It is some evidence of our advance that expensive books like MICHAUX at twenty-four dollars, and NUTTALL'S three additional volumes at twenty-one, are taken off to remote States with the rapidity they are. Even at these seemingly high prices they could not be manufactured, and so superbly colored, but that the plates were obtained from Paris gratuitously by the liberality of the late WILLIAM MACLURE, for the benefit of his countrymen. By this he has done much for America; we will not stop to contrast his conduct with the much bepuffed speculations of a * * * * and a * * * *, but we are proud to believe that there is a little aristocracy of readers of the Horticulturist, who estimate things by their right standards.

LILIUM THOMPSONIANUM.

Planchon asserts that it is neither more nor less than a Lily. It appears to have been found under two forms, one of which has rose-colored and the other violet-colored flowers; but Dr. Wallich's notes on the two forms in a living state leave no doubt as to their specific identity. The culture is described as in a cold frame, or in pots in a cold greenhouse or orangery during winter. There is a strong probability of its resisting the climate of a great part of this country in the open air. Its distinct color and graceful habit claim attention.

REMARKS ON THE VEGETABLE GARDEN.

BY WILLIAM CHORLTON, NEW BRIGHTON, STATEN ISLAND.

It is somewhat gratifying to find your amateur correspondents inquiring for more practical knowledge with regard to the more economical cropping, and better use of the vegetable garden. This subject has long been behind the march of improvement which has characterised some other parts of Horticulture, and it appears not a little singular, when we consider the utilitarian age we live in. While there has been an intense desire to ransack Europe for new Pears, &c., and some cultivators can boast of exhibiting on the same table, from two to three hundred (said to be) distinct varieties,—while the minds of many have been puzzled for a new idea, in the arrangement of a trim bouquet,—the vegetable garden has been left with no further notice or forecast than merely planting and sowing; little or no regard being paid to rotation of crops, or how they may be arranged so that one may succeed another, during the season, without half of the ground lying waste. Surely this is of sufficient importance to receive attention, particularly if we consider the pecuniary results. The Vegetable Garden is in itself a pleasing object, if well attended; but we must also look for more substantial gratification. The capital spent in this department should be returned, with interest, and the general health promoted, by the wholesome produce which it can be made to bring forth. Therefore, a few general remarks may not be out of place, and will be something toward answering the request of your correspondent in the August issue.

When a man is first domiciled in the wilderness, he very naturally looks around him for the best spot, the most advantageous position upon which to grow food, and in his then primitive state he is induced to go the readiest and least expensive way to work, which will, of course consist in roughly breaking the sod. He is satisfied with the greater or less produce, according to the natural fertility of the soil, without troubling himself about making the most of a small space, or how many crops he can get off the same piece in a season. But in more densely populated localities, where land has become high-priced and restricted in extent, and where the first settler's mode of action has reduced the perhaps never very fertile properties to a state of almost sterility, it becomes a matter of consequence for us to consider how we can make the most of what we have. There are some who still cling to the antiquated

notion that land must lie "fallow" part of the time in order to maintain its capabilities to produce, and that without this we labor in vain. Such a theory may do well enough for those who are contented with half a cropped garden, where the weeds are often the most prominent objects, but it will never satisfy the energetic observing mind of a good cultivator; nor can he be convinced that such a mode of procedure can be made to pay. That "fallowing" is of service under some circumstances, may be reasonably admitted, as the getting rid of the multitude of the seeds of weeds, and mellowing of the soil, by frequent plowings and harrowings after the first turning up; but in these days of progress we find that agricultural chemistry teaches us that by supplying the deficient elements, good drainage, proper rotation and judicious tillage, we may keep the same plot always occupied, or at least during the time when the temperature is high enough to forward vegetation. Now, if this be true, (and it would be no difficult matter to furnish the proof,) there is no occasion to have any part of the vegetable plot lying waste, except during the winter season, and even then a portion may be employed. But this is not to be accomplished without forethought, as each kind to be grown must be considered with reference to its time of duration, so that it may be known how far one will interfere with the other, or how soon the ground will be clear of the present to make room for the future crop.

If Peas are sown in rows six feet apart, Celery may be planted between each row; and before the latter require earthing up, the former will have perfected their crop, and may be removed. Spring Spinach and Turnips will answer between the rows of Peas, if sown early, and may precede the Celery. A crop of Ruta Baga may follow early Potatoes; or winter Turnips may succeed Potatoes which are second early. After a crop of Early Cabbages the last planting of Sweet Corn may be put in. Rows of early Lettuce, Radishes, and such like, if placed six or seven feet apart, will not interfere with Water Melons, as the Melons will be progressing and the Lettuce, &c. will be fit for the table before the vines meet. Cauliflowers, also, if planted in rows the same distance, will not interfere with Musk Melons. Squashes if sown among the earliest crops of Sweet Corn, will not be injured if the corn stalks be removed when the heads are past use. Winter Cabbage will do planted between the rows of late Potatoes. Beets for winter, or fall and winter Cauliflower, may re-occupy any vacant ground in the middle of July.

It is desirable that no fruit trees be planted where esculents are grown; but where this is unavoidable, the smaller kinds, as Gooseberries and Currants, may be put beneath the larger ones. Cucumbers, Gherkins, &c., will do in the shade, yet not so well as in an open exposure, but will fill up vacant spaces under trees, for the sake of economy. These are only a few examples, given to illustrate the method by which the whole of a Vegetable Garden may be kept well stocked through the season, and it will be readily seen how much further the subject might be pursued. To give more would only appear like an endeavor to establish something like mechanical rule, a thing that gardeners should in all cases avoid. Be ruled by circumstances, observation and foresight, and there is little occasion to fear failure.

Where unremitting cropping is practiced, the different successions will require

attention as regards manure and trenching; but as a general thing, if proper rotation is practiced, several crops may be taken off the same piece with one application of the fertilizing material; and a well considered plan of action in advance will enable the operator so to arrange and prepare the various plots, that the fall (which is the best) or early spring manuring will suffice, without the necessity of having to litter over the garden during the summer season.

The rotation of crops, or growing different kinds in succession, is a practice that every person who is acquainted with cultivation, acknowledges to be essentially required. Although correct chemical analyses shows that all plants are composed of the same elements, with very slight differences, yet these minute variations are sufficient to act very powerfully; enough so to be in many cases a mystery. Agricultural chemists often give us truthful accounts of the integral parts of different plants, and we might infer that if the soil contains something like relative proportions of these materials, that success must be certain. This, it is true, is an index, by which we may in part be guided. We must, however, recollect that a living plant is somewhat of chemical laboratory, and it is not yet determined in what proportions the different parts as found in the structucture, are taken up, or whether some of them are not manufactured by the plant itself from more simple elements. There is yet much need of investigation on this point, notwithstanding the great advancement that has been made of late years. In the mean time, it is well for us to leave all such weighty experiments to those who have time and opportunity to carry them out, and fall back upon established facts. It is well known that plants decompose carbonic acid by the leaves, and assimilate the carbon in their structure, and we may with propriety suggest that, as this gas is heavier than the atmosphere, those vegetables which have a great amount of succulent leaf and near the ground, are capable of absorbing a large quantity, and very likely more than they really require, consequently a portion of this may be given out by the roots, and remain as nutriment for future crops of a less absorbing character. After a very careful observation for many years, I am led to believe in this theory, and constantly make use of it in my own practice, with success. To make the matter more plain, a crop of Turnips or Beets may be succeeded by Peas, and Spinach by Corn, &c. It may be admitted that the manuring between crops, will in some cases appear to counteract this presumption, but I have always found the manure when so applied, to act more powerfully if the above kind of rotation has been observed.

Foreign Notices.

TORREYA MYRISTICA, *Hooker in Bot. Mag. t.* 4780; *alias* T. CALIFORNICA, *Torrey in New York Journal Pharm.*—An excellent figure is here given of this fine evergreen coniferous tree, which has been raised by Messrs. VEITCH. It is said by Mr. W. LOBB to grow 30 to 40 feet high, in the elevated regions of Sierra Nevada of California. Its foliage resembles that of *Cephalotaxus Fortuni*. The seeds are as large as nutmegs, and have the same kind of alburnum (called by botanists ruminated), whence they have gained the name of nutmegs in California. We find the following account of them in the last number of the "*Pharmaceutical Journal*:"

"About a year ago (says Prof. TORREY) I received from the late Mr. SHELTON, who had just returned from San Francisco, a specimen of what was called the California Nutmeg. I immediately considered it a species of ARNOTT's genus Torreya, belonging to the order Taxineæ of the great natural family of Coniferæ. It had been discovered but a year or two before Mr. SHELTON left the country, and had already attracted considerable attention, not only from the beauty of the tree, but from the singular character of the fruit and kernel, the latter strongly resembling the common nutmeg. Indeed, it has been frequently stated in letters from California that the Nutmeg is a native of that country. The foliage has the form and deep rich green of the Florida species, or *T. taxifolia*, as well as of the Yew; but the leaves are much larger, being from one and a half inch to two and a quarter inches long. They spread out on two sides, and are tipped with a sharp rigid point. The fruit, as it may be popularly called, is about the size and form of a *Greengage* Plum, and in the dried state has a pale olive color, but this may not be its natural tint. The outer covering is a thick, fleshy, nearly closed urceole, or dish, which completely invests the seed, and closely adheres to it, except near the summit. It is smooth and even, and soft to the touch. The seed is usually oblong, and greatly resembles a large Pecane Nut, but frequently it is more ovate. The shell is smooth, thin, and fragile. On each side, near the summit and just below the non-adhering portion of the dish, is a perforation, communicating with an interior canal, similar to what I described in *T. taxifolia*, and the use of which is still unknown. The kernel is conformed to the shell, and has the external and internal appearance of the Nutmeg. When cut transversely the resemblance is perfect. The seed, however, is wholly destitute of the delicate aromatic odor of the oriental spice, for it has the strong terebinthine character of the Coniferæ. Neither is the fleshy covering of any known use. It is more probable that, like the fleshy cup-a-berry of the Yew, it is of a poisonous nature. Still the discovery of this tree is interesting to the botanist and to the horticulturist. But two other species are known besides. One of them (*T. nucifera Sieb.* and *Zucc*) is a native of Japan, and the other has only been found hitherto in Middle Florida, in very confined stations. The latter is erroneously stated by ZUCCARINI to have a seed as large as a Walnut, by which he undoubtedly means the *Juglans regia*, or Madeira-nut, as it is called in the United States. As an ornamental tree, the California Nutmeg deserves to be extensively cultivated. It must be hardy, as it grows on the mountains, where the winter is very severe. The enterprising Messrs. PARSONS & Co., of Flushing, sent out a person to California for the express purpose of collecting the ornamental and useful plants of that country, and among other varieties he obtained, last year, some ripe and fresh seeds of the California Nutmeg. These germinated freely, and, when I saw the young plants last October, they had a healthy appearance, and had attained a good size. I have lately heard, also, that Mr. LOBB, an English collector, who has been exploring California for several years past, has sent seeds of this tree to England."—*Gardeners' Chronicle.*

THE NEW BOOTAN RHODODENDRONS.—The *London Florist* gives the following description of these new Rhododendrons, from Mr. E. G. HENDERSON:

R. Nuttalli.—This, the largest flowered Rhododendron known, has foliage handsomer than described in books on living plants now in this country; the flowers resembling those of the Lily, are much larger than the Sikkim Rhododendron *Dalhousiæ*. Color, white, with tint of rose-red, and yellow at the base within, and delightfully fragrant. It has been named in compliment to the veteran botanist and traveler, T. NUTTALL, Esq.

R. Windsori.—This splendid colored garden Rhododendron, of a color even surpassing the *Rhododendron arboreum*, will be found invaluable, from its dwarf close-growing habit and large truss.

R. Camelliæflorum.—A very curious species, discovered in the valley of Lablung, also on the Bootan Alps; at the latter place growing at an elevation of 9,000 to 12,000 feet. In foliage it resembles *R. Maddeni;* 3 to 5 inches long. Corolla, sparingly scaly, 1½ inch across; of a very thick texture; pure white, with a faint rosy tinge; all the segments obtuse and entire; the flower strongly resembling that of a single Camellia, from which its name is derived; a very distinct flower from any other Rhododendron.

R. Jenkinsi.—This species, according to a specimen without flower or fruit, in the herbarium of Sir W. HOOKER, was found by the late Mr. GRIFFITH, on the Khasya Hills. As a species, it is allied to *R. Madenni*, of Dr. HOOKER; and these, along with *R. sparsiflorum*, *R. camelliæflorum*, *R. lucidum*, and *R. calophyllum*, have a very peculiar aspect, all agreeing in their smooth lepidote leaves, and succulent texture. Mr. BOOTH supposed, from the examination of the buds, that *R. Jenkinsi* would have yellow flowers, the specimens having been collected in the month of December. It is named in honor of Major JENKINS, of the East India service. If, as is probable, this species has large yellow flowers, like *R. Madenni*, it will be one of the most distinct exhibition plants in the tribe.

R. longifolium.—A magnificent foliaged plant, discovered in the forest of Bootan, on the slopes of the Oola Mountains, at an elevation of 6,500 to 7,500 feet above the sea-level; the leaves 12 to 18 inches long, 3 to 5 inches wide in the middle; at first, pubescent; at length, smooth, or nearly so; gradually narrowed downwards; obovate, lanceolate, silvery, and whitish beneath. To all appearance, nearly hardy in this climate.

R. Keysi.—A hardy, distinct shrub, growing to the height of two or three feet, on the mountains of Bootan, at an elevation of 9,000 to 10,000 feet above the sea-level, on the summit and northern ridges of the Lablung, forming low thickets, accompanied by Gaultherias and Yews above the range of *R. Hookeri* and *R. Falconeri;* leaves two and a half to three inches long, about an inch wide; coriaceous, and smooth; beneath, as well as capsule, almost covered with brown circular resinous scales. Corymb, compounded of three or four branchlets, each containing five or six flowers. Corolla (judging from the withered remains only) tubular; the border five-lobed and reflexed; the segments ovate, obtuse. Rather aromatic, from the resinous scales with which the leaves are clad beneath. In its native hills it grew amidst snows two or three feet in depth. It is allied to Dr. HOOKER's *R. virgatum;* the flowers, as in that species, axillary, or below the summit of the branch. A shrub very distinct in habit.

POT CULTURE OF THE VERBENA.—As the Verbena merits a place, and most justly, among popular florists' flowers, perhaps a few hints on its cultivation in pots may be acceptable to those who have not hitherto adopted that mode of culture. I know of no plant more useful or ornamental as a pot plant, for decorating the greenhouse during the summer season, when the proper inmates of that structure are enjoying the open air. If we take into consideration its graceful habit, the variety and brilliancy of its colors, which offer hues for every taste, and above all, the lengthened period it continues to produce its lovely blossoms, it is unrivalled and ought to be more generally grown in pots as specimens, more especially now that the numerous varieties are so much improved, both in form and color. The present season has been productive of some gems of the first class; and if the Verbena continues to be improved as it has been during these

few years past, I have no doubt that the time is not far distant when it will form one of the leading features at our floral exhibitions. I do not know if my system of propagating this favorite be new; but as it is simple, certain and expeditious, it may be as well to state how I proceed from the commencement. I fill shallow pans (such as are used for placing under flower pots) to within a quarter of an inch of the top with silver sand, and pour in water sufficient just to cover the sand. I then make the cuttings in the usual way, and push them into the wet sand; put the labels to them, and place them in a hot-bed frame where the heat ranges from 65° to 70°, always keeping the sand wet. The advantages to be realized by propagating the Verbena in this way are, that the cuttings never require to be shaded in the brightest sunshine, consequently the young plants are not drawn up long and lanky; the cuttings never stop growing from the time they are put in until they are ready to pot off, which is in about six or seven days, when they may be drawn out of the wet sand, with a bunch of roots, without injuring a single fibre. The best time to commence operations for growing specimen Verbenas in pots is February, or as soon as vegetation commences for the season. It is desirable to pot a few of the best autumn-struck plants for the sake of early bloom; but they never make such handsome specimens, nor continue so long in good health, as plants raised from cuttings in spring. As soon as the cuttings are well rooted, they should be potted into 3-inch pots, and placed in a gentle heat for a few days, until they are established in the pots; then top them, and harden them by degrees; never allow them to remain long in heat after they begin to grow, or they will form long naked stems. As soon as the pots are filled with roots, shift into 6-inch ones, and from these into 11-inch pots. During the growth of the plant, all shoots must be stopped in order to cause the plants to grow bushy; and never allow them to flower until the plant is properly formed, and has as many leading shoots as are wanted. The compost in which I grow the Verbena is, equal parts of turfy loam, leaf mold, and peat, with a little silver sand added, to keep the soil open. I water twice a week with liquid manure, and occasionally syringe over head with clean water to cleanse the foliage. If the saving of the seed is no object, all flowers ought to be cut off as soon as they begin to decay. I need scarcely add, that the grand secret in the successful culture of this, as well as of all plants, is efficient drainage; without this no plant will continue long in good health. If green-fly should attack your plants, fumigate with tobacco; for if the fly once gets a-head, the plants will never recover sufficiently to give satisfaction. Mildew is another enemy which must be looked after. As soon as it is perceived, dust the plants with a little sulphur, which will stop it from doing much mischief.—*Y., in Gardeners' Chronicle.*

On the Cultivation of Cape Heaths.—Having procured some nice bushy plants of the sorts intended to be grown, which had better be done early in the spring, and having prepared sufficient good fibry peat, by breaking it to pieces and mixing with it a liberal quantity of silver sand, and some lumps of charcoal or small pebbles, proceed to shift the plants from 3-inch to 5-inch pots, or from 5-inch to 7 or 8-inch pots, and so on, as the case may be, using the peat coarser for the large sizes than for the small ones, and employing clean, well-drained pots. Press the mold firmly round them; if the peat is light, it must be pressed till it is quite firm, or the plants will probably grow very freely for a time, and then suddenly die. When they are shifted, place them in a cold frame and keep them rather close and shady for a few days, but do not go to extremes either way. Gradually increase the air, and reduce the shading till in fine days the lights are left off entirely.

As the weather becomes warm, leave air on all night, and in hot June, July, and August days shade them in the middle of the day, and leave the lights off all night. Many of them would, no doubt, bloom; but if they are slow-growing kinds, and specimens are required, I would prefer stopping them all over as soon as they get into good growth. When they require it pass a strong band of matting or string round the pot, and with some fine matting draw the shoots regularly towards the edge of the pot, in order to allow the air to pass freely through them.—Any fine woolly growth they may make in the centre had better be cut out, for it only turns yellow and unsightly if allowed to remain. Some of the free flowering kinds may be allowed

to bloom, and all those of a straggling habit should be cut back directly after, while those of more dwarf habit may merely have the extreme points pinched off some of them as soon as they can be caught peeping through the flowers; others may be pinched back on the top only, to allow weak side shoots to acquire strength before the leading ones break. The plan of merely taking out the point as it peeps through the flowers will be found useful in regard to some of the late blooming kinds; for by the time the flowers fade, the plant will be found to have broken a crop of buds just behind them. Some of the earliest stopped plants will probably require another stopping by the middle of July, while others will be found breaking freely of their own accord. Those that require it had better be stopped; and as they grow, the shoots must be carefully regulated by drawing them out with fine matting, and perhaps a fine stick or two.—Some of the free growing kinds may be shifted again about the same time, if rapid progress is required; but as a rule I do not think it advisable to do so, for very quickly grown plants are mostly short-lived. I prefer placing the plants on inverted pots or pans, and in hot weather keeping the bottom of the pit moist, so as to maintain a healthy atmosphere round them. If the plants are much exposed to the sun the front of the pot must be shaded, and any of them that do not shade the soil in the pot had better have a few pieces of crock placed on its surface.

ERICA CAVENDISHI.

In wet weather the lights should be kept over the plants, but they must either be propped up by pots at the corners, or tilted by placing a block or pot under one edge. Heaths will take a great deal of water if properly treated; for instance, if a plant is allowed to get quite dry and is then well watered, the pot being filled up two or three times, it will absorb more moisture than one that is watered a little every day, and the soil will keep sweeter; care must, however, be taken not to let them get so dry as to make their very delicate roots shrivel.

As the winter draws on, if there is no proper house for them, with a little care they will winter very well in pits;* if by chance they should get frozen hard, if they are allowed to stand in the dark, they will take no harm; and if the weather should be damp and close, a few lumps of lime placed here and there between them will tend to keep them free from mildew, which, however, should be carefully watched for at all seasons, and as soon as it is perceived the parts must be dusted with black sulphur. By following the same course of treatment the next year some very nice specimen plants may be grown, and by persevering with them they will become noble plants, like the fine specimen represented by the accompanying woodcut.—*J. B., in Florist.*

* It would not be safe to rely on cold pits in this country, in the north; for in order to avoid the consequences of severe frost, they would have to be totally excluded from the light for weeks at a time. The best place is a cold greenhouse, where heat can be applied if necessary.—Ed. Hort.

DISA GRANDIFLORA.—Among the many striking instances of horticultural skill, exhibited at the last meeting at Chiswick, nothing attracted more attention than a terrestrial Orchid, well known to amateurs under the title of *Disa grandiflora*. From among some grassy leaves this gorgeous plant sends up a stem bearing erect some three or four flowers, each as large as a lady's hand, and of the richest crimson, melting into yellow.

It occurs at the Cape of Good Hope, and in no other part of the world. In that colony its favorite haunt is Table Mountain, where, according to Dr. HARVEY, it is so common that every stream is literally bordered with it in March. Sir JOHN HERSCHEL tells us that the temperature of the situation where it occurs is *occasionally* as low as 31½°, and also occasionally as high as 96½°. It lives on the borders of pools of standing water, the drainage of the boggy slopes of the mountain, in which its roots are immersed. These are dry or nearly so in summer. But it is frequently involved in the dense mists of the clouds, which, even in the hottest months, often prevail for a week or fortnight at a time.

These facts, and his own observations, appear to have suggested to Mr. LEACH that skilful course of treatment which has led him to such entire success. How he proceeds we learn from a letter with which he has favored us:

"I would say that my success in growing it has, I think, resulted simply from treating it as a greenhouse plant, and not drying it off for rest, as is usually done with Cape bulbs. I have not yet been able to perceive that my plant has ever been perfectly at rest; leaves seem either to be lengthening or offsets coming up—it was this peculiarity which determined me upon continuing to give it water all the year round—moderately, of course, during winter, while the thermometer was ranging between 35° and 45°, and freely during the other parts of the year.

"I suspect that, in its native habitats, though long continued heat and drouth may cause all foliage to die down, the roots, nevertheless, in the ravines where I understand it grows, remain continually moist. With me, however, a change of habit seems to take place, and the offsets of last autumn and winter become the flowering plants, not of this, but of next year; while those now in flower will die down, leaving an abundance of plants, scarcely half grown, and followed soon afterward by fresh offsets.

"Rough fibrous peat is the soil I use, with a good portion of silver sand; good drainage, of course—and, from the results I have obtained, I see no reason why this very beautiful species should not be found in the greenhouses of every one disposed to bestow the same care upon it which he gives to his Geraniums, and such like plants."

In this belief we concur, provided always a master's eye is present, to insure the plant against that neglect or forgetfulness which kill more fine plants in a year than merely bad cultivation in a century.—*Gardeners' Chronicle.*

JAPANESE APRICOT.—We learn from the *Touinbouw Flora* that the Dutch have succeeded in fruiting the Japanese Apricot, called by botanists *Prunus* (or *Armeniaca*) *Mumè*. A colored figure in the same work gives so good an idea of the plant that, as an undoubtedly distinct species of hardy fruit tree, the time has arrived for bringing it into notice in this country.

The first account we have of this Eastern fruit is to be found in KÆMPFER, who calls it *Bai*, or *Umè*, and *Umè boa*. He calls it a wild spiny Plum with a large fruit, and adds that the fruits preserved in the lees of *sacki* or Japanese beer (*Cerevisia japonensis*), are exported to India and China. In 1835 SIEBOLD and ZUCCARINI, in their work on Japanese plants, entered into particulars. We give the substance of the statement made by these authors, who call the plant *Mumè*, and give *Bai* as its Chinese name. "The *Mumè* is found through all the empire of Japan, but thrives best in the northern parts, where it grows fifteen or twenty feet high, and much resembles an European Apricot tree. When wild or planted in hedgerows it is a close branching bush, from eight to twelve feet high. It is much cultivated for the sake of its flowers as well as its fruits. In good seasons the tree is in flower in the beginning of February, and is then used for decorating the altars and dwellings of the Japanese, as a symbol of the return of spring. In the wild plant the flowers are white; when cultivated they vary through every shade of rose and red, even becoming greenish or yellowish. Those most highly valued are the double sorts, which

are used for dwarfing as well as for planting in gardens. Several hundred such varieties were collected in the garden of the Prince of Tsikusen. The fondness of the Japanese for dwarf trees is well known, and this *Mumè* is one of the plants most used for the purpose. In 1826, a dealer offered for sale a specimen in flower which was scarcely three inches high. This marvel of gardening was growing in a little red varnished box of three stages, like the drug-boxes which the Japanese carry at their belt. The upper stage was occupied by the little *Mumè*, the middle stage by a Spruce Fir equally small, and the lowest stage by a Bamboo not more than an inch and a half high. As for the fruits, they ripen in June; when quite ripe they are insipid, for which reason they are salted down when green, like Cucumbers, and are eaten as a vegetable with rice and fish. Much, however, as they are esteemed by the Japanese, Europeans do not relish their sour bitter taste. They are usually colored red, when salted, by adding the leaves of *Ocymum crispum* (a kind of curled Basil.) The juice of the green fruit is taken as a refreshing beverage in fevers; and is regarded as indispensable to the preparation of the beautiful and delicate red dye prepared from the Safflower."

It will be seen from this account that we must not reckon the Japanese Apricot as a dessert fruit, unless in the form of a preparation like that of the Olive, for which it seems to be a Japanese substitute. We would therefore guard our readers against being seduced into the purchase of it by a fine-sounding name. From the figure in the *Tuinbouw Flora*, the fruit would seem to have much resemblance to the little early Apricots which the French call *Alberges*—pale straw-color, with a little salmon-red on one side and near the stone. But, although no hope can be entertained of its becoming of any value at table, it is very possible that it may become valuable as a stock for the cultivated Apricot. The climate from which it comes is very severe, and it is certainly a true Apricot. Therefore we have undoubted hardiness on the one hand, and a great constitutional similarity on the other. In the latter respect, it ought to be much better suited to the Apricot than the Plum stock—which is apt to disagree with its Apricot scion—or than the Apricot itself, which is too tender to be buried underground in our wet and cold winters. As soon as the *Mumè* becomes cheap enough to be so employed, we would recommend it to the notice of the nurserymen. In the meanwhile let us guard the public against imagining that, because it is really an Apricot, it is therefore worth growing for dessert. Such value in horticulture as it possesses, beyond what is now suggested, is wholly confined to its effect as a tree that blossoms at the same time as the Almond.—*Gardeners' Chronicle.*

The Rice-paper Plant.—On the morning of the 20th of April last, the steamer in which I was a passenger dropped her anchor a little way up one of the rivers on the north-east part of Formosa. As this was my first visit to this fine island, and as I knew we had only a short time to stay, I lost no time in going on shore. Before leaving the vessel I had been examining with a spy-glass some large white flowers which grew on the banks and on the hill sides, and I now went in that direction, in order to ascertain what they were. When I reached the spot where they were growing, they proved to be very fine specimens of *Lilium japonicum*—the largest and most vigorous I had ever seen. As I was admiring these beautiful Lilies, which were growing as wild as the Primroses in our woods in England, another plant of far more interest caught my eye. This was nothing less than the Rice-paper Plant—the species which produces the far-famed Rice-paper of China, named by Sir W. Hooker *Aralia papyrifera*. It was growing apparently wild; but the site may have been an old plantation, which was now overgrown with weeds and brushwood. The largest specimens which came under my notice were about five or six feet in height, and from six to three inches in circumference at the base, but nearly of an equal thickness all up the stem. The stems, usually bare all the way up, were crowned at the top with a number of noble looking palmate leaves, on long foot-stalks, which gave to the plant a very ornamental appearance. The under side of each leaf, its foot-stalk, and the top part of the stem, which was clasped by these stalks, was densely covered with down of a rich brown color, which readily came off upon any substance with which it came in contact. I did not meet with any plant in flower during my rambles, but it is probable the plant flowers at a later period of the year. Numerous small plants were coming through the ground in various directions, which a

Chinese soldier carefully dug up for me, and which are now safely deposited in Mr. BEALE'S garden at Shanghæ. These, with a few samples of the largest stems I could find, will be sent to England in the course of a few months; the latter will prove an interesting addition to our museums of vegetable productions. The proportion of pith in these stems is very great, particularly near the top of vigorous growing ones, and it is from this pure white substance that the beautiful article erroneously called "Rice-paper" is prepared.

The Chinese call this plant the *Tung-tsaou*. What it was, or to what part of the vegetable kingdom it belonged, was long a mystery to botanists, who were oftentimes sadly misled by imaginary Chinese drawings, as some of those which have been published will clearly show, now that our knowledge has increased. Indeed the only drawing I have seen in Europe, which has any claim to be considered authentic, is that brought from China by Mr. REEVES many years ago, and which I have seen in the library of the Horticultural Society of London.

The *Tung-tsaou* is largely cultivated in many parts of the island of Formosa, and with rice and camphor forms one of the chief articles of export. Mr. BOWRING, who read a paper upon the Rice-paper Plant, before the China Branch of the Royal Asiatic Society, informs us that the Canton and Fokien provinces are the chief consumers, and that the town of Foo-chow alone is supposed to take annually not less than $30,000 worth of this curious production. The cheapness of this paper in the Chinese market, as Mr. BOWRING justly remarks, is evidence of the abundance of the plant in its place of growth, and more especially of the cheapness of labor. "That 100 sheets of this material (each about three inches square), certainly one of the most beautiful and delicate substances with which we are acquainted, should be procurable for the small sum of 1½d. or 1¼d., is truly astonishing; and when once the attention of foreigners is directed to it, it will doubtless be in considerable request among workers in artificial flowers in Europe and America, being admirably adapted to their wants."* The larger sheets, such as those used by the Canton flower-painters are sold for about 1½d. each.

If the *Tung-tsaou* proves hardy in England, its fine foliage will render it a favorite among ornamental plants in our gardens. Judging, however, from its appearance when growing on its native island, and from the temperature of Formosa, I fear we cannot expect it to be more than a greenhouse plant with us. Plants of it are already in the Royal Garden at Kew, and the point will soon be set at rest by actual experience.—*R. F., in Gardeners' Chronicle.*

IMPORTANCE OF THE ONION.—The onion is worthy of notice as an extensive article of consumption in this country. It is largely cultivated at home, and is imported, to the extent of seven or eight hundred tons a year, from Spain and Portugal. But it rises in importance when we consider that in these latter countries it forms one of the common and universal supports of life. It is interesting, therefore, to know that, in addition to the peculiar flavor which first recommends it, the onion is remarkably nutritious. According to my analyses, the dried onion root contains from twenty-five to thirty per cent of gluten. It ranks in this respect with the nutritious pea and the gram of the east. It is not merely as a relish, therefore, that the wayfaring Spaniard eats his onion with his humble crust of bread, as he sits by the refreshing spring; it is because experience has long proved that, like the cheese of the English laborer, it helps to sustain his strength also, and adds, beyond what its bulk would suggest, to the amount of nourishment which his simple meal supplies.—*The Chemistry of Life.*

WATER SUPPLY TO HOUSES IN ANCIENT ROME.—The water from the aqueducts was finally received into huge reservoirs, one for public use in supplying the fountains, and one for private use in supplying the dwellings. When a supply was granted to a private individual, a branch pipe was inserted in the main; from this it was distributed to the leaden cisterns common to every house, and the supply was measured by a bronze tube termed calix, and which was stamped like an imperial measure; this calix was in the time of AGNETUS constructed of lead; but the fashion was put a stop to when it was discovered that the water officers used to cheat the inhabitants by compressing the pipe.—*Builder.*

* "Proceedings of the China Branch of the Royal Asiatic Society."

Editor's Table.

MEETING OF THE NATIONAL POMOLOGICAL SOCIETY AT BOSTON.—We are unable to give at present more than a rough sketch of the proceedings; as soon as the official report comes from the press, we will endeavor to lay the more important parts of it before our readers.

Pursuant to notice, the session opened on the 13th inst., at half past 10 o'clock. President WILDER in the Chair. The attendance was fair, but less numerous than we expected. The dry season had some effect in keeping people away, as a large and general display of fruits was not expected. There were respectable delegations from New York, New Jersey, Pennsylvania, Maine, New Hampshire, and Vermont; one from Ohio, one from Illinois, one from Iowa, and one from Georgia. Names will be given hereafter.

The President's address was the first business in order, and an excellent, practical address it was. The principal topics discussed in it were—1st, Raising Fruits from Seed; 2d, The Arts of Cultivation; 3d, The Preservation and Ripening of Fruits. We regret not being able to present at least a portion of it this month.

The next business in order was the selection of officers for the ensuing year. A committee of one from some five or seven States was appointed, and the officers of last year were re-nominated and elected unanimously:

MARSHALL P. WILDER, *President.* One *Vice President* from each State. H. W. S. CLEVELAND, *Secretary.* THOS. P. JAMES, *Treasurer.*

A committee was appointed to prepare an order of business, and reported the following: First, Discussion of the Pear, in the following order:

1. *Rejection of worthless sorts.*
2. *Adoption of sorts for general culture.*
3. *Adoption of sorts that promise well.*
4. *Sorts for culture on Quince stock.*

When these subjects are closed, the Apple, Plum, Cherry, and other fruits to be taken up.

DISCUSSION ON FRUITS.—On the list of Pears proposed for rejection were the following sorts, which were retained at the suggestion of Mr. HOVEY:

Beurre Adam, *Dumortier of Manning*, *Duchesse Dumas*, *Figue de Naples*, *Flemish Bonchretien*, *Hacon's Incomparable*, *March Bergamot*, *Knight's Monarch*, and *Styrian*.

The list previously recommended for trial as "promising well" was then taken up, and the only variety on it deemed worthy of promotion to the list "for general cultivation" was the *Manning's Elizabeth*—very highly commended by nearly all who have tested it. *Brande's St. Germain* and *Diller* were stricken off the list as unworthy, and the others, after discussion, were allowed to remain. The names of *Van Assene* and *Duchesse d' Orleans* were changed to *Van Assche* and *Beurre St. Nicholas*, being the original names

The following varieties were discussed and admitted to the trial list as "promising well": *Beurre Clairgeau*, *Sheldon*, *Collins*, *Adams*, *Howell*, *Beurre Superfin*, *Lawrence*, *Belle Epine Dumas*, and *Walker*.

The President was requested to name a few of the more promising new varieties, and gave the following:

Pius IX, *Rousselet d' Esperin*, *Beurre Sterckman*, *Chas. Van Hoogten*, *Comte de Flanders*, and *Theodore Van Mons*.

Mr. MANNING added *Fondante de Maline*.

The *Easter Beurre* was introduced and discussed at considerable length. Many had succeeded well with it, and others could not ripen it. It sells in the Boston market at $3 to $6 per dozen. We shall quote the discussion on it hereafter.

The *Fondante de Noel*, known as "Belle Apres Noel," was well spoken of. *Fondante de Noel* was suggested by Mr. BERCKMAN as the original and correct name, and was so agreed to.

Apples.—We were absent during a considerable part of the discussion on Apples. The *Melon* and *Hawley* were, we believe, recommended for general cultivation, the *Benoni* for trial, and the *Ladies' Sweet* was passed as one of the best winter sweet varieties. Several others were discussed and passed by as not being sufficiently known.

Cherries.—The following varieties were adopted as promising well:

Belle d' Orleans, *Gov. Wood*, *Black Hawk*, *Great Bigarreau*, *Coe's Transparent*, *Kirtland's Mary*, *Hovey*, WALSH'S seedling, known and disseminated by HOVEY as the *New Black Bigarreau*.

Strawberries.—The discussion was very unsatisfactory. There seemed to be an astonishing difference of opinion in regard to the merits of sorts. *Burr's New Pine* and *Jenny's Seedling* were recommended for "certain localities."

Plums.—The following were recommended for general cultivation:—*McLaughlin*, *Smith's Orleans*, and *Reine Claude de Bavay*: and as promising well, *Washington Seedling* and *Monroe*.

Raspberries.—*Knevett's Giant* was adopted for general cultivation, and the *Orange* and the *French* as promising well.

Blackberries.—The *New Rochelle* was highly spoken of by those who knew it. The *Needham White* variety generally regarded as worthless.

No action taken upon Apricots or Nectarines we believe.

Grapes.—The *Diana* was recommended for general cultivation. The *Concord* was discussed, but nothing more done in relation to it than to adopt the report of the committee on seedling fruits. That report will appear hereafter, and we shall also have a word to say of this variety.

We found it impossible, in consequence of frequent interruptions, to carry out our intention of making a complete report of the decisions on fruits, but as soon as the official report appears we shall correct all errors and make up all deficiencies. We know that many will be desirous of learning as soon as possible what the decisions of the Society were on certain varieties, and we therefore give an imperfect sketch without delay.

Pears on Quince Stock.—This part of the business was taken up towards the close and the following twenty-two varieties were unanimously agreed to as worthy of being recommended for general cultivation on that stock:

Duchesse d' Angouleme, *Rostiezer*, *Beurre d' Anjou*, *Beurre Diel*, *White Doyenne*, *Louise Bonne de Jersey*, *Vicar of Winkfield*, *Glout Morceau*, *Fig*, *Beurre Langelier*, *Easter Beurre*, *Pound* or *Uvedale's St. Germain*, *Cattillac*, *Beurre d'Amaulis*, *Long Green*, *Noveau Poiteau*, *Soldat Laborer*, *Urbaniste*, *Napoleon*, *Buffam*, *St. Michael Archangel*, *Triomph de Jodoigne*,

The proceedings throughout were characterized by the utmost caution, carried even to

the extreme, as we think, in many cases, in regard to recommending fruits. This will be readily seen from the small number agreed to for general culture, and also from some varieties previously recommended having been stricken entirely off the lists. This will doubtless commend such decisions as have been made to the confidence of the public. The delegates from abroad go home well pleased—delighted with the hospitality and kindness of the Boston horticulturists, and greatly instructed and encouraged by their skill, enterprize and enthusiasm.

The exhibition of the Society was grand. A great oval tent on the common, 200 feet long and 100 feet wide, filled with the finest fruits and flowers. A table through the center was occupied with flowers and plants. On either side of this were two tables laden with fruits, and around the side a table for cut flowers, vegetables, &c. In the evening it was brilliantly lighted with gas, and a band of music played at intervals and gave the scene additional zest. The competition for the premium for the best thirty varieties of Pears, twelve specimens of each, brought out a fine display, on each of the four tables there was a collection of thirty varieties from Messrs. WILDER, WALKER, CABOT and HOVEY.

The President of the Society, as well as the Committees and members, were unceasing in their attentions to the delegates from abroad, and when we say we never spent three more agreeable days than we did among the Boston gentlemen, we only repeat the unanimous expression of all those from this and other States.

President WILDER gave a magnificent "pomological levee" at the Revere House. More than two hundred were present, we should think, including the Governor of the State, the Mayor of Boston and many of the most eminent gentlemen of Massachusetts and other States. The table was the richest and most tasteful we have ever seen, and this was the expression of many who have attended the most brilliant affairs of this kind ever given in Boston. Fruits and American wines were most bounteously supplied, as were all other articles necessary to a most sumptuous and elegant entertainment. The occasion was free from formalities—all seemed happy in greeting old acquaintances and forming new ones. Sentiments appropriate to the time were given and responded to in brief off-hand speeches. The universal remark was, that what Mr. WILDER does, he not only does well but *better than any one else*. To this we cordially assent.

In two years from this time the Society is to meet at Rochester, and the North-West Pomological Society is invited to meet it there. We hope and believe that this general assemblage from the east and west will be no less pleasant or profitable than any we have yet seen. The time is distant and great changes may take place ere then, but we shall look forward to it with pleasure nevertheless.

We have made note of much that we saw in our calls around Boston and elsewhere, but our mention of them must be brief for the present.

CALLS AROUND BOSTON.—Being closely occupied with the proceedings of the Pomological Society during our brief stay at Boston, we were compelled to deny ourselves the pleasure we had anticipated, in visiting many of the beautiful gardens of that city and its environs. The Society adjourned on Friday, at 2 o'clock, and we only had that afternoon and the forenoon of Saturday, to make our calls; consequently they are few and brief.

Residence of Marshall P. Wilder, Esq., at Dorchester.—To a person interested in Horticulture and Pomology, we know of no place in America that offers so many attractions. The collection of bearing fruit trees, (Pears especially,) is unequalled. A week would not be too much to examine them satisfactorily. The trees are all vigorous and productive,

showing that they are supplied with their appropriate food. The soil is rather light and gravelly, and would only produce such growth as we see on it, under the best management. Among new Pears of which we noticed very beautiful trees, were *Conseiller Ranwez*, *Walker*, *Theodore Van Mons*, *Nouveau Poiteau*, *Dallas*, *Stirling*, and *Charles Van Hoogten*. We observed a fine tree of *Kirtland's Mammoth* Cherry with leaves surpassing in size and luxuriance those of any Cherry tree we have ever seen. If the fruit is proportionably large it is well named.

The collection of exotic plants is large, and embraces most of the new, rare, and very fine plants. A specimen of the *Cissus discolor*, (the most beautiful of all variegated-leaved plants) on Mr. WILDER's table, among his fruit in the Society's tent, was the "observed of all observers." Standing in the midst of the magnificent dishes of Pears, it very happily represented the blending of the useful and beautiful. In the conservatory we were shown a fine flowering specimen of the rare yellow *Bignonia Chamberlinii*. The collection of Camellias is immense, and embraces a very large number of seedlings. *Wilderii* and *Abby Wilder*, are now well known as among the very finest varieties in cultivation. From so many promising seedlings, others of equal, or even greater merit may reasonably be expected. The plant-houses, graperies, &c., are all complete and elegant.

The lawn and ornamental grounds around the mansion, are tastefully arranged and kept in the best possible condition. Refreshing rains had fallen previous to our visit, and the new growth of grass was green and fresh as it could be in the month of May. Mr. WILDER is a farmer as well as a horticulturist. We were shown a pen of beautiful Suffolk pigs, and some fine Durham cows. It is no more than right that the President of the National Agricultural Society should have some fine stock.

Graperies of W. C. Strong, Esq., Newton.— The most extensive culture of Grapes under glass which we have had an opportunity of seeing in this country, is that of Mr. STRONG. He has three houses, each upwards of 200 feet long. One is a forcing-house, and the crop was cut; but in two of them there was a full crop on the vines, all remarkably well-grown, well-colored, and fine. We think Mr. STRONG told us that he would send some 3000 lbs. to market this season. The early crop from the forcing house usually sells at $2 per lb., and the autumn crop at fifty to seventy-five cents. If the culture of Grapes under glass for market can be made profitable, we think Mr. STRONG will make it so. His houses are plain and inexpensive, but well adapted to the purpose. The roofs are curved; and each of the cold-houses has a brick flue, which can be used in spring to keep out late frosts, and in fall to ripen off late varieties.

Mr. STRONG made a superb display on the tables of the Horticultural Society. Among his collection we noticed fine large bunches of *Muscat of Alexandria*, *Cannon Hall Muscat*, and *Damascus*, a very large, distinct, oval, purple Grape. Three feet of a *Hamburg* vine was shown with fourteen large bunches on it.

Mr. STRONG's residence is on an elevated situation, adjoining the ground formerly occupied by WM. KENRICK's nurseries, commanding a fine view of the environs of Boston. His grounds are extensive and susceptible of great improvement. Land in the vicinity is highly valued for suburban residences. At the base of the hill occupied by Mr. STRONG, we find the residence of his father-in-law, JOSEPH BRECK, Esq., author of the "*The Book of Flowers*," whose name has been associated with Agriculture and Horticulture, as long as we can remember. His establishment here consists of a garden of three acres, two graperies and a plant-house. The garden is tastefully laid out, and mostly occupied with annuals, herbaceous perennial plants, Roses, and the finer shrubs; to all of which Mr. BRECK devotes special attention. His houses are complete, and even elegant, both in design and

finish. His graperies contain a great number of varieties, and all were bearing a fine crop. The hour of our visit was too late in the evening to allow us more than a glance at them.

Mr. BRECK and his son carry on an extensive seed business in town, and this suburban retreat affords them pleasant and profitable employment, and recreation during their morning and evening hours. Business of the day falls with comparative lightness on men who enjoy such privileges; the more so when they possess habits and tastes capable of appreciating them.

Messrs. Hovey & Co.'s Nurseries.—This is one of the most enterprizing and prosperous establishments of the kind in America. The nurseries are remarkable for the great number of specimen fruit trees, (Pears especially), which they contain; the numerous walks which intersect the ground, are so many avenues of Pear trees, in great variety. To the fruit-grower and pomologist they offer a wide and interesting field of study. The trees are mostly conducted in pyramid form. *Swan's Orange*, *Lawrence*, *Urbaniste*, *Vicar of Winkfield*, *Beurre Langelier*, *and Boston*, we noted as among the most vigorous and well-formed trees. The heaviest crop was on the *Louise Bonne de Jersey*.

The plant-houses are extensive, and conducted with great spirit. The newest and finest plants may be found in the collection. We were shown, among other rare plants, a large specimen of the *Lilium giganteum*, which will soon flower, a fine specimen of *Medenilla magnifica*, and many other attractive novelties. A bed of exquisitely beautiful Pansies near the conservatory was one of the most admired objects at the time of our visit. It is a great rarity to see so fine a display of them at that season, and especially after so dry a summer.

The ground occupied by these nurseries will soon be too valuable for such purposes. It is already closely surrounded by elegant and costly residences. The neighborhood is one of the most attractive in the vicinity of Boston.

VISITS.—*Pinney's Orchard at Brockport.*—We made Mr. PINNEY a hurried call on the first of August, and looked through his fine orchards of Peaches and dwarf Pears. His trees all looked well, considering the long drouth they had suffered. His *Early York* Peaches were gone, and he was just beginning to pick *Crawford's Early*, of which the crop is very heavy. This and the *Early York* are the two most certain and abundant bearers he has in his very large collection. He had a crop of *Fay's Early Ann*, but they are small, and not much earlier than *Early York*. His orchard of dwarf Pears looked remarkably well; the trees made vigorous growth; and the *Louise Bonne* and *Virgalieu*, showed some fine specimens. The trees have been but three years planted, we believe, and show well for a crop next season. Those who talk of dwarf Pears not doing well, should see Mr. PINNEY's trees. We think we observed only two cases of blight in the entire orchard.

Garden of H. P. Norton, Esq.—No one can look through Mr. NORTON's garden without being surprised at the quantity of interesting and useful material he has assembled in such a small compass. In the rear are several very large Apple trees. On one were fine specimens of *Hawley* and *Early Joe;* there had been *Red Astracan* too, but they were gone. A couple of trees of *Greenings* were like little mountains of foliage and fruit—no trace of a trunk was to be seen; and if there be any, they never see daylight, during the summer season at least. Nearer the house we saw beautiful dwarf Pears, loaded with fruit, besides a melange of flowers—Roses, Petunias, Verbenas, annuals, and such things as are best calculated to keep up a continual gaiety. The dry weather which had prevailed for two long months before our visit, made everything appear to disadvantage, but we were able to see

that people who have taste can accomplish much on a very small piece of ground, and at small expense. Mr. NORTON lost, last season and this, two of his finest Pear trees by blight —a *Glout Morceau* and *Summer Francreal*—the best specimens perhaps in America. A great loss to a small collection.

A COMPLETE SUBURBAN RESIDENCE.—One of the most complete, tastefully-arranged, and well-kept suburban residences in the fashionable quarter of our city, (East Avenue), is that of SELAH MATHEWS, Esq. The front lawn is spacious in proportion to the extent of the grounds, and is kept closely cut and smooth as a piece of velvet. The fruit and kitchen garden in the rear of the dwelling show good culture. On each side of the main walk there is a row of fine dwarf Pears in full bearing. The trees of *Louise Bonne de Jersey* and *Dutchess d'Angouleme* are models of beauty and productiveness combined. They are grown as low standards with pyramidal heads. A snug little vinery, about twenty-five feet long, and bearing a fine crop of fruit, gives a finish to this department; and we understand another to be heated, and to include pits for forcing early vegetables, is about to be erected. Barns and other out-buildings, servants dwellings, &c., all exhibit taste and judgment in the arrangement, and complete the picture of a very comfortable establishment. We have others to speak of by-and-by.

BRITISH POMOLOGICAL SOCIETY.—A society under this name was organized in London, on the 10th of July last. Our friend THOS. RIVERS, Esq., presided on the occasion. Its name and purposes are announced as follows:

"1. That a Society shall be established, to be called the British Pomological Society.

"2. That the Society shall have for its object the promotion generally of Fruit Culture in the British dominions. That it shall especially direct attention to the production of new varieties of Fruits, examining and reporting on their merits, and endeavoring to classify the Fruits of Great Britain, the European continent, and America."

A pretty wide field that, friend RIVERS. You sometimes accuse us on this side the water of being somewhat extravagant in our enterprizes, but we have never ventured on any thing like this. "*Great Britain*, the *European continent*, and *America*"! *Go ahead.*

CORRECTION.—We insert the following note as the best means of correcting the error alluded to:

"You will oblige me by making a few corrections and additions to my notice of the *Stanwick* Nectarine. Your separating it from my account of the *Nelumbium*, and omitting a few other sentences, makes it appear that the term "here" applies to our own place, thereby doing an injustice to Mr. COPE's present gardener, to whom all the credit and honor of its successful culture is alone due. I may add, that since my notice of it, Mr. COPE informs me that the fruit has ripened, and "surpasses even expectation" in the richness of its flavor — approaching more nearly the taste of a Peach than that usual to a Nectarine. Though ripe before the exhibition, and the fruit had to be preserved some days in ice, in order to be saved for it, our fruit committee thought it worthy of a special premium. THOMAS MEEHAN.

THE CHENANGO STRAWBERRY APPLE.—Under this name we have received specimens of a large, oblong, handsome, striped Apple, of very good quality, from Mr. W. COLLINS, Jr., Smyrna, N. Y. He says the tree is a vigorous, upright grower, and a great bearer. We have found the same Apple at Brockport, in this county, under the name of *Strawberry* Apple; but we have not been able to trace its origin. It is well worthy of cultivation.

The North Western Pomological Society has postponed its next meeting as will be seen by the following circular.

Burlington, Iowa, Sept. 7th, 1854.

"In consequence of the severe and protracted drouth which has prevailed the present season throughout the fruit-bearing region of the North-west, and the consequent nearly total failure of fruits of every description, the undersigned Committee of Arrangements of the North Western Fruit Growers Association, appointed at the meeting of 1853, deem it best to postpone entirely the session of 1854, which was to have been held at this place, until the season of 1855.

They have been especially induced to pursue this course, presuming that the principal object of the meeting of the Association west of the Mississippi River is to inspect and test the fruits of this region. The failure of our fruit crop being (in common with our neighboring States) nearly complete, in consequence of drouth, the disappointment to visitors from abroad would not be less than the mortification of Western Fruit Growers at their inability to make a display worthy the attention of the Association."

Henry Avery, Abner Leonard, G. C. Nealley,
Comm. of Arrangements N. W. Fruit Growers Association.

Soulard's Bergamot Pear.—Under this name we have received from Jas. G. Soulard, Esq., of Galena, Ill., specimens of Pears, supposed to be a seedling fruit, and if so, originated some fifty years ago in his father's garden, now in the city of St. Louis. Mr. S. describes the tree as erect and a fair grower, with stout, rigid shoots. It bears in a reasonable time, and becomes very prolific. The fruit is round, like an Apple, with a short, stout stalk, about medium size, or rather below; of a greenish color; melting and juicy. Mr. Soulard says: "In quality, in my opinion, it yields the palm to none; for though less sugary than the *Seckel*, it is preferred by many for its greater sprightliness, and higher, finer aroma." We cannot speak of the quality, as the specimens were damaged on the journey; but we think it a fine Pear, and we shall test it here as soon as possible.

Pears.—We are indebted to Chas. Downing, Esq., for fine specimens of the *Ananas d'Ete* and *Shenk* Pears, August 30. The latter are just ripe, and are *very good*, but in every one we have seen there are knots and cracks. Mr. Downing's specimens were raised on the Quince, and were as large and fine as any we have seen from Pennsylvania, and of better quality. Specimens grown in our own grounds have not been either so large, fair, or good, as those from Newburgh. Mr. Downing thinks it will not prove worthy of general or extensive culture. The *Ananas d'Ete* is a very fine fruit.

Isabella Grapes.—We have received from E. A. McKay, of Naples, a box of *Isabella* Grapes from his vineyard—the largest and most perfectly ripened we have seen this season, and as fine as we have ever seen. Part of them were gathered September 6th, part on the 12th, and about half the entire crop was ripe on the 21st. Mr. McKay has promised some more "facts" respecting his mode of culture. His last statement attracted some attention, and is not forgotten.

It is estimated that the Grape crop of Ohio and Pierce Townships, in Clermont county, Ohio, reaches between fifty and sixty thousand dollars annually. Last year is the only one which proved entirely successful in the culture of the Grape; but the prospects are quite fair for the present season. Mr. Weir, the largest Grape-grower in the vicinity of New Richmond, says that he made thirty-three hundred gallons of the juice in 1853.

CUBA.—We have an eye to this paradise of an island, and make the following interesting extracts from a new work published in Boston, written by MATURIN M. BALLOU, entitled "*History of Cuba, or Notes of a Traveler in the tropics,*" one of the most reliable and agreeable books of the kind we have ever met with. It is full of information, and though we regret that the writer has no botanical or scientific knowledge, his descriptions of the climate and vegetation are graphic and pleasing. He has a fine eye for the beauties of nature:

A COFFEE PLANTATION.—The Coffee plant requires some shade, and hence the plantations are diversified by alternate rows of Bananas and other useful and ornamental tropical shrubs and plants. It is one of the most beautiful gardens that can well be conceived, in its variety and beauty baffling correct description, being one of those peculiar characteristics of the low latitudes which must be seen to be understood. An estate devoted to this purpose usually covers some 300 acres of land, planted in regular squares of eight acres, and intersected by broad alleys of Palms, Oranges, &c., &c. Mingled with these are planted Lemons, Pomegranates, Cape Jasmins, and a species of wild Heliotrope, fragrant as the morning. Conceive of this beautiful arrangement and then of the whole when in flower; the Coffee with its milk-white blossoms, so abundant that it seems as though a pure white cloud of snow had fallen there and left the rest of the vegetation fresh and green. Interspersed in these fragrant alleys is the red of the Mexican Rose, the flowering Pomegranate, and the large gaudy flower of the Penon shrouding its parent stem in a cloak of scarlet, with wavings here and there of the graceful yellow flag, and many bewitchingly fragrant wild flowers, twining their tender stems about the base of these. In short, a Coffee plantation is a perfect floral el dorado, with every luxury (except ice) the heart could wish.

RANK.—"The Sugar-planter, the Coffee-planter, the merchant, the liberal professions and the literati (this last a meagre class in numbers), stand about in the order in which we have written them, as regards their relative degrees of social position, but wealth has the same charm here as in every part of christendom.

PRODUCTIONS.—"The agriculturists confine their attention almost solely to the raising of Sugar, Coffee and Tobacco, almost entirely neglecting Indian Corn, and but slightly attending to the varieties of the Orange. It is scarcely credible that, when the generous soil produces from two to three crops annually, the vegetable wealth of this island should be so poorly developed. It is capable of supporting a population of almost any density, and yet the largest estimate gives only a million and a half of inhabitants. On treading the fertile soil, and on beholding the clustering fruits offered on all sides, the delicious Oranges, the perfumed Pine Apples, the luscious Bananas, the cooling Cocoa Nuts, and other fruits for which our language has no name, we are struck with the thought of how much Providence, and how little man, has done for this Eden of the Gulf. We long to see it peopled by men who can appreciate the gifts of nature, men who are willing to do their part in reward for her bounty, men who will meet her half way and second her spontaneous efforts. Nowhere on the face of the globe would intelligent labor meet with a richer reward—nowhere on the face of the globe would repose from labor be so sweet. The hour of rest sinks upon the face of nature with a peculiar charm; the night breeze comes with its gentle breeze to fan the weary frame, and no danger lurks in its career."

There are many reasons why we should be glad to see our enterprising citizens in possession (peaceable) of this glorious island besides political ones. The horticultural points of interest are great indeed; what glorious cargoes would we export to our American cities! We heard a smoker give his reasons the other day, as he puffed a fine Havana, thus:—"Why, yes, we must have it; cigars are too dear!"

Our author says that superior Pine Apples are sold in the markets at one cent a piece! The most singular of the fruits is the Rose Apple, which, when eaten, has the peculiar

and very agreeable flavor of Otto of Rose, and this is so strong that to eat more than one at a time is almost unpleasant. It has a very sweet taste and flavors some soups finely. Hedges are often made of Lime trees; with their exquisite green leaves they form a superb object with their clusters of white blossoms. We must quote another page respecting

THE SCENERY.—"The style of the buildings is not dissimilar to that which is found in the Orient, and the trees and vegetable products increase the resemblance. Particularly in approaching Havana from the interior, the view of the city resembles almost precisely the Scriptural picture of Jerusalem. The tall, majestic Palms, with their tufted tops, the graceful Cocoa-nut tree, and many other peculiarities, give to the scenery of Cuba an Eastern aspect, very impressive to the stranger. It is impossible to describe to one who has not visited the tropics, the bright vividness with which each object, artificial or natural, house or tree, stands out in the clear liquid light, where there is no haze or smoke to interrupt the view. Indeed, it is impossible to express fully how *everything* differs in Cuba from our own country so near at hand. The language, the people, the climate, the manners and customs, the architecture, the foliage, the flowers, and the general products, all and each afford broad contrasts to what the American has ever seen at home. The visitor seems to have been transported into another quarter of the globe, and believes himself in distant Syria or remote Asia."

The soil of Cuba realizes DOUGLAS JERROLD'S remark of Australia, "just tickle her with a hoe and she laughs with a harvest." So fertile a soil is not known to exist in any other part of the globe. But this lovely climate and beautiful land are made gloomy, alas! by the persecutions of their oppressors. Our author consoles his countrymen by assuring them that the Moro Castle's boasted strength is "chimerical!" There are some among us who will be glad of the intelligence.

TRANSPLANTING TREES IN THE AUTUMN.—"Do you approve of fall planting?" is a question asked us every day. Our answer is, *yes*, under these circumstances:

1st. When the ground is of such nature and in such condition that water will not lodge around the roots of trees during winter. To plant trees in holes sunk in stiff, tenacious soils, is a certain method of killing them.

2d. The trees should be *perfectly hardy*. All delicate or half-hardy trees should invariably be planted in the spring. If it be necessary to take them up in the fall, they had better be laid in by the roots in a *dry soil*, sheltered from the cold, cutting winds, and, if necessary, protected with boughs of evergreens or something of that nature.

3d. We do not approve of planting evergreen trees in the fall, unless the very hardiest sorts, and that quite early, say in September or first of October, in time for the trees to re-root, partially, before hard frosts; and they should be sheltered from the sun and wind by a thick screen of evergreen boughs well secured around them.

4th. Plant all trees *early*—as soon as circumstances will permit after the wood is ripe. Don't wait till the leaves fall, but cut them off, being careful not to injure the buds. Late planting, however, if well done, may be equally successful. We transplant any time most convenient, between the first of October and first of May. Last winter, in December, we planted several hundred of specimen trees, from one to six years old, and lost not over two or three in the whole. Many of the bearing trees, notwithstanding the drouth, have borne and ripened fine specimens of fruit.

5th. Secure all trees from being blown about by the winds, and mulch with half-rotten manure or leaves three or four inches deep.

Asparagus, Rhubarb, Gooseberries, and Currants, should all be planted in the fall, and as early as possible. Also, hardy bulbs, such as Hyacinths, Tulips, Narcissus, Crocus, Crown Imperials, and Lilies. It is also the best season to top-dress and renovate neglected trees of all sorts,—to make new walks and repair old ones—to lay down turf, and perform such operations as grading, draining, trenching, &c., incident to the formation of new gardens, lawns, &c. Our springs are short, and hot summer weather very often comes too soon. It is therefore well to make a good use of every hour between this time and the freezing of the ground.

STRAWBERRY CULTURE.—A correspondent of "*The Country Gentleman*" thinks the plan we recommended, in the August number, of planting in rows, "radically defective," and declares himself in favor of beds; but we must let him speak for himself:

"I have sold about three thousand quarts this season, mostly HOVEY'S, and many of them were an inch and five-eighths in diameter, and they were grown on beds two and a half feet wide, and averaging a plant to every five or six inches on the bed. I am not an advocate of letting all the runners grow till they have made the bed one solid mat, but do contend that Strawberries may and should be grown in beds, because it is attended with less trouble, and vastly more worth can be obtained from an acre, for I have grown at the rate of seventeen hundred dollars to the acre at twenty-five cents a quart, and I know of others doing as well.

"And here let me say that I have never protected my beds in winter, or mulched the alleys in summer; nor have I ever had any trouble in selling them, but could to-day engage the next year's crop to any fruit dealer in our market; which by the way knocks down, I think, another position taken by the Editor, which is, that every system of culture which stops short of stirring the soil around each plant is defective. It seems to me perfectly clear that to put out Strawberry plants three feet by eighteen inches, would require five acres to get as much worth as can be obtained from one acre of beds properly managed; besides it is no small operation to cut straw to mulch ten or twelve acres. And here I will say that I do not know of a single horticulturist in this vicinity but what cultivates in beds, and I should be willing to have our exhibitions compared with those that are grown in rows.

"My advice to those who intend to put out Strawberries for field culture, is, to put out your plants as early in April as the ground will do to work, in rows two feet apart, and one foot in the row, and let the runners take possession of every other space until the plants will average one to every five or six inches, and not to allow runners or anything else to take possession after that. I would not set myself up as possessing all knowledge on the subject of Strawberry culture, but have given my experience, which, if good for anything, can be adopted—if worthless rejected. PRACTICAL.—*New Haven, Ct.*

Now, Mr. PRACTICAL may be right, but we must say that we have very seldom seen bed culture produce fine fruit, except perhaps the first season. He agrees with us in not letting the runners grow into a "solid mat," and it is because in beds they are generally allowed to grow so, and difficult to prevent from growing so, that we cannot approve of the method. It seems to us that it would involve some labor to keep plants in a *bed* thinned out to the distance of five or six inches. Every cultivator knows how all fruit-bearing plants are affected by keeping the ground open, clean, and friable, around them. During the past dry summer, we have seen *beds* utterly burnt up, while rows with the ground worked about them did not suffer in the least.

THE GRAPE, AND WINE.—At a recent meeting of the American Wine Growers Association at Cincinnati, the following was read from N. W. THATCHER, of Chillicothe:

* * * * "The great desideratum in wine growing is, doubtless, to procure a Grape possessing at once sugar in abundance, and an agreeable aroma—probably the *Catawba* (there are some spurious varieties of this Grape) possesses these qualities to a more profitable degree than any Grape we now cultivate, inasmuch as it is perfectly hardy; but this Grape should not be regarded as the type of American Grapes, for we shall yet surpass it, and to those whose palates do not accord too much with the foxy aroma of the *Catawba*, the *Herbemont* is the most acceptable Grape; but the latter is not sufficiently hardy for extensive and profitable cultivation; but as we have several varieties of that class of Grapes, we may look for the production of seedlings from them that will surpass any of the fox family. Doubtless a cross of the *Herbemont* and *Catawba* would produce a valuable Grape as to flavor and juiciness.

"It is doubtless a desideratum to obtain a Grape possessing all the requisites for good wine; that is, it should be productive, hardy, juicy, sweet and well favored. Until we can get one Grape possessing in a sufficient degree all these, we can cultivate several varieties and attain our object by mixing the berries in the mash tub. This is desirable, at least, to afford variety in our wines, as well as to give flavor to strong-bodied wines which are without it.

"The wine I sent you was made of 75 per cent of the *Herbemont* Grape, 20 per cent of the *Catawba*, and 5 per cent of the *Constantia*, (Schuylkill.) The *Herbemont* was not fully ripe when gathered, but were picked ten days before pressing. The *Catawba* were quite ripe, and gathered some days before pressing. The *Constantia* were fully ripe, and gathered just before mashing. By fully ripe I mean 'dead ripe,' the stems brown and dry; and that is the grand point in wine making. The Grapes were picked, stood twelve hours before pressing, and no extraneous substance of any kind was added, nor has any addition since been made of any substance whatever. The wine, after coming from the press, was fermented in glass.

"The taste of the juice of the Grape, as well as for various kinds of food, becomes fixed to some particular sorts by custom, and finally to the exclusion of anything new; and hence I infer it will be difficult after a few years, to eradicate the predilection of Ohio wine—even for the foxy aroma of their *Catawba* wines. If we look forward to the exportation of wines to foreign countries, we must look for their production in Grapes of the *Herbemont* type. I am a wine grower to a very limited extent, and only as an amateur; but still my experiments are, so far as they are successful, as valuable in their results as if I crushed the Grapes of a township. I shall make no wine this season. I am satisfied that we can make as good wines in this country as in any other, and at equal price. I would prefer the best Cincinnati wine to any foreign I have ever seen; except, perhaps, the pure Xeres, Sherry, and Mangannelta, which we rarely see."

STATE OF THE VINEYARDS.—THE ROT.—It was stated that this disease had prevailed to a great extent: Mr. NEFF's vineyard, at the Yellow Springs, was almost entirely destroyed; Mr. YEATMAN had one-third of a crop; Mr. RINTZ had lost nearly all by mildew; Mr. HEATH had a good show; Mr. BUCHANAN had lost much by mildew, less by rot, but should not make 300 gallons per acre. Mr. REHFUSS had little mildew or rot where well drained. In Whiteoak and in Kentucky, there was little damage. On Indian Hill it was very bad. Mr. KINZBACK stated that it was bad up the river; they would make a third of a crop. Mr. ROSS had not much rot and a little mildew, injured by frost in the spring; he would average a third of a crop; Mr. WEEK, who had no mildew on his widely planted vines, had lost one-eighth by the rot.

Mr. BUCHANAN stated that the *Venango*, or *Minor's Seedling*, had escaped all injuries—it had no mildew nor rot.—*Ohio Farmer.*

Washing and Scraping Trees.—It is not at all uncommon, in these days of literary and practical plagiarism, for amateur horticulturists in search after truth, to ask for bread, and receive a stone,—to ask for knowledge, and receive a jumbled medley of plagued nonsense, from some new-fledged stripling who fancies himself qualified by nature to teach mankind.—And never was this more truly and strikingly apparent, than in a paper signed R. Morris Copeland, which has been published in some of the journals as emanating from the Massachusetts Horticultural Society. I had thought, Mr. Editor, that this piece of nonsensical, absurd, and contradictory jargon, would, from its very character, exonerate any sensible and intelligent member of the Massachusetts Horticultural Society, much more the Society itself, from any odium attached to sending such a production into the world. It would seem, however, that this R. Morris Copeland has, in publishing this precious piece of bombast in one of the Boston papers, purposely, or, to be charitable, unintentionally identified the Massachusetts Horticultural Society with the paper, simply because such paper was presented to the Society and ordered to be laid on the table, and printed for the use of the members, as such worthless papers generally are. Nor would the manifest vanity of the author of such paper, sending it of his own accord, and entirely unknown to any other person, even to the other members of the committee, deserve the slightest notice, other than that silent contempt generally accorded to such a proceeding. But when we find the same person vilifying and abusing as carping critics, &c., all and every one who chooses to condemn his so-called report, as he has done in the "*Practical Farmer*," a very good paper published in this city, then I say we think it almost time to inquire who this mighty Achilles in tree-scraping is?—what amount of experience he has embodied in the report, and brought to bear on the subject?—and, moreover, whether said paper is sanctioned by the Massachusetts Horticultural Society, or even a committee of it?

On inquiry, we find this doughty opponent of the experience of every intelligent horticulturist who has given any attention to the subject, to be a new-fledged stripling from a public school, who made his appearance last year about Boston as a Landscape Gardener,—the science and art of which, we believe, he learnt at said school,—and who has been found unable to tell the names of even the commonest forest trees, keeping the culture and diseases of such trees out of the question. Do you not feel ashamed, you carping critics and snarling editors, *for stigmatizing a paper issuing from so respectable a source?* But, the names of Marshall P. Wilder, Samuel Walker, Joseph S. Cabot, &c., are lugged in by our hero of the wire brush, to back up his impudent deception. Let me ask, will those gentlemen acknowledge the parentage of such a paper? But hold on, I have a host of authorities. I have, says the learned investigator of this useful subject, "composed my report of the written expressions of Emerson, Agassiz, Russell, Gray, Harris, &c." So that this learned reporter has investigated the pages of these authors, and not the subject for which the committee was appointed by the Society; and instead of patiently and perseveringly investigating a subject requiring years of observation and experience on the part of the investigator, we have a jumbled report composed of sentences and disconnected remarks from the writings of the authors above mentioned, interspersed with some silly, insipid balderdash of his own; the whole so garbled as to be perfectly unintelligible, and so contradictory as to mean neither one thing nor another.

And who were the committee? The other two, from want of time, or from some other cause, never read the report *until they saw it in a public paper.* They deny knowing anything about it; and consequently it was not even the report of a *committee* of the Society, nor do I believe that three men could be found in the whole Society, who would put their names to such a report. From his splenatic remarks in the "*Practical Farmer*" of Saturday the 19th, R. Morris Copeland appears terribly insensed at the remarks in your last number, at the queer set of resolutions, &c., and says: "*An argument based upon facts, as well as common sense,* deserves to be answered by arguments of a similar nature; yet no one can find in all of the two, and most of the four articles, anything beyond *word criticism* and the absolute dicta of men whose opin-

ion is worth just as much *as their education, experience, and reasoning,* can induce the reader to give, and no more." Is this not the acme of practical puppyism?—yet precisely what we would expect from this doughty garbler of other people's books, who seems so entirely ignorant of practical horticulture and arboriculture, that, in the plenitude of his benignant charity, he considers every other person as much in need of teaching as himself.

I expect the usual fandango about writing without signing my proper name, but will promise him, if he will write good English, and behave like a man, I shall address him openly; if not, let him console himself with the reflection of a better man, that a secret friend is better than an open foe. A MEMBER OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—*Boston, Aug.* 21.

Our correspondent is well and widely known as a practical and scientific horticulturist of experience—a man who has works as well as words to sustain, whatever position he may take. We wish his criticism were milder and less personal; we abhor personalities in which the public can have but little interest, and which are always unedifying and unpleasant. The truth can always be vindicated and error exposed without the use of names. The innocent young gentleman in question, however, has voluntarily exposed himself to attack, and he must bear the consequences.

THE CURCULIO.—At a meeting of the New York State Agricultural Society, at Albany, Feb. 7th, 1854, four gentlemen and myself were put on a committee to test a discovery of a remedy for the Curculio. Subsequently this committee was reduced to three, on account of objections made by the discoverer of so many being possessed of his discovery. Now, as I was not favored with the secret, and consequently was not able to test it with a discovery of my own, published in the *Horticulturist,* Vol. 6, page 420, in 1851, I am not able to give you an account comparing the two modes of preventing the attacks of that most fearful insect, as I expected to. I send you, accompanying this, a small box, containing specimens of Plums raised by me by applying my remedy, accounts of which are contained in Vol. 6, page 420, also page 524, and in Vol. 7, page 350 and 432, and which I take pleasure in referring to for the benefit of your readers. THOS. W. LUDLOW, JR.—*Yonkers, N. Y.*

The specimens of Plums referred to did not bear the slightest trace of the Curculio, and we are inclined to believe that Mr. LUDLOW's remedy is not without efficacy. We have never tried it; but many of those who have bear testimony in its favor. Our remedy is to *shake* the trees, and pick up and destroy *daily* all unsound fruits; thus we lessen the number of Curculios, and get heavy crops. The Plum crop here this season is prodigious—every tree seems to be *overloaded.* Trees that never bore a Plum before are now breaking down. *All* the remedies tried in this region, the present year, will be entirely successful.

PEACH CULTURE IN OHIO—THE DROUTH, &C.—A correspondent in Adams county, Ohio, writes us as follows:

"In 1853, I sold off about nine acres of Peaches to the amount of $3,000, and this when Peaches were plenty and very cheap. Mine were the largest and finest I have ever seen, selling at from $2 to $4 per bushel in the Cincinnati market. This year with little over half a crop, and that crippled by drouth, my sales will reach near $2,000.

"Lime, ashes, and bones, added to our free stone soil, has an extraordinary effect. This, with careful pruning and good culture, will produce the best of fruit.

"We have had the dryest and hottest season we have experienced for twenty years. Our crops of Corn and Potatoes are poor indeed. For two weeks past there has not been a steamboat moving on our beautiful Ohio River. I hope you have had a better season in Western New York.

SHENK PEAR.—The dignified coolness with which you receive the bold assertions of Messrs. T., S., H. & Co., is quite refreshing. I am pleased that said company have now boldly asserted that which by implication they had said before, that I am not acquainted with the Pear about which I presumed to give an opinion. It is possible that after an acquaintance of more than ten years with this variety, and a Pomological tour through Lancaster County, (see Report Am. Pom. Soc., 1852,) I may never have "tasted a true specimen in full perfection." How many of the "lovers of the Pear," where the *Shenk* is known, are familiar with the *Bartlett*, *Ott* or *Tyson?* It is uniformly "very good" in Lancaster, very worthless here. In many localities it will undoubtedly fail.

In order to correct the correction in your August number, permit me to say there is no such Pear as *Shenk's August* known in Lancaster Co. There is, it is true, in the garden of Mr. VONDERSMITH, (recently so notorious,) whence the *Shenk* scions sent to Syracuse were obtained, a less desirable Pear called *August*, scions of which accompanied the *Shenk*. Whatever may be their relative growth at Syracuse, in Lancaster County and here the *Shenk* is one of the most vigorous growers. Indeed, among hundreds of varieties not one has grown more vigorously.

In regard to the note in your last number, permit me to say that my first acquaintance with the *Shenk* Pear was on the ground of Mr. ESHLEMAN, in Lancaster Co. Not being able to trace its history it was temporarily named after him. Subsequently specimens and scions were sent to Dr. BRINCKLE, who distributed them under that name.

Would it not be well for that Co., who have demonstrated their acute discrimination in ROSES, to speak with more becoming modesty about this Pear, of which they certainly have had very limited experience. J. K. ESHLEMAN.—*Downington, Pa.*

DWARF PEARS.—We never saw finer bearing dwarf Pears than the present season on the grounds of BISSELL & HOOKER and of ELLWANGER & BARRY, of Rochester, N. Y. The former showed us several *Bartletts* in a row, six or seven feet in height, bearing a good crop, and appearing in every respect as healthy and thrifty as trees of the same variety standing near them, on Pear roots. Two trees of the *Louise Bonne de Jersey* presented a beautiful appearance, both from their thriftiness and dense crops of handsome fruit. We never saw fruit trees of any kind more heavily laden—an acre of such would certainly afford a large pecuniary profit. ELLWANGER & BARRY have large numbers of fine specimen trees; and although the season has been unfavorable to some, others were handsomely loaded. A small tree of the *Tyson*, about four feet high, was profusely filled with Pears, and we never saw a more beautiful picture than this graceful little tree with its trusses of ruddy cheeked specimens presented. It is to be daguerreotyped. The *Beurré Giffard*, on the same grounds, afforded specimens, notwithstanding the unusual season, having all the freshness, juiciness, and high flavor which in former years it has been found to possess. It ripens before the *Tyson* and *Rostiezer*, or about the time of *Osband's Summer*, and, although much inferior in the vigor and beauty of the tree, is certainly decidedly ahead of the latter in the quality of the fruit. This and the *Summer Doyenné* are the two greatest acquisitions of late years among summer varieties.—*Country Gentleman.*

THE NUTMEG TREE.—The *California Farmer* says that at Bird's Valley and Eldorado Canon, this valuable tree is found in its greatest perfection. Trees are found here from eighteen to twenty-four inches in diameter, and full of the fruit which is contained in a covering like the coating of the English walnut. Before ripe it is soft, and quite stringent, but when mature the cover opens and the nutmeg drops. The berries or nuts ripen at various periods. Upon the same tree may be found ripe and green fruit. The ripe nutmeg is the same form, and is as fully aromatic as this fruit from Sumatra. The foliage is like the pine or the hemlock, each leaf having, however, sharp briars or thorns upon it. The fruit grows in clusters similar to the cherry, and is indeed quite ornamental. This tree can be easily grown and will become an acquisition, and we trust ere long to see it generally cultivated.

Strawberries. — I gathered sixty-four boxes of Strawberries the past summer from three beds of vines, the beds being forty-five feet long and two feet wide, with an interval of two feet between the beds. The berries were large and fair (*Walker's Seedlings*) and would have readily commanded a sale at fifty cents a box, thus causing 540 square feet of land to yield a gross income of $32. The soil was rich garden loam only four inches deep over solid rock. The earth was wholly scraped from the rock in the intervals, and its place supplied with fresh tan. After the blossoming of the vines they were supplied with water from the pump very abundantly. During the late drouth they have not been watered at all, and yet, at this moment, after the abundant rains of last week, they appear as well as any vines in this vicinity. The intervals between the rows have become covered with vines, and I am this day cutting and removing them. It is just two years since I set out the plants, 100 in number, of which thirty-three died.

I disregarded all authority in setting out vines in such shallow soil, and did it simply because I did not know in what other way to attempt to cover a barren spot in my garden. I have been successful, and give the fact for the benefit of those who may be similarly situated, and not as foundation for any generalizations. James Ritchie.—*Roxbury, Mass., September* 12, 1854.

Notices of Books, Pamphlets, &c.

A Scientific Exposition of the Cause and Cure of the Potato Rot.

The above is the title of a book just published by J. N. Chandler, Adrian, Mich. A very small book it is, but it may be all the better for that. Mr. Chandler holds that "there are two causes, *primary* and *secondary*. The primary cause is the weakening and refining processes which have been (ignorantly) carried on ever since the Potato has been cultivated. The secondary cause is,—the inferior position of the electric fluids, which is in the lower stratum of the atmosphere, (especially when the negative state is existing,) permeates everything upon the surface of the earth." The second cause Mr. C. credits to the writings of A. J. Davis, in which the prevalence of cholera is attributed to the electrical condition of the atmosphere. He says where iron abounds, as at Pittsburg, the Potato is free from rot, and the cholera has never raged.

We consider all that is said about electricity as pure speculation; but we find some remarks on the culture and keeping of the Potato, worthy of attention. Mr. C. endeavors to show, that high culture, and keeping the seed a great portion of the year *out of the ground*, has brought about a detriment that predisposes the tubers to diseases, as people under certain conditions are predisposed to cholera. This may be; but in Ireland, where the disease has been most destructive, the Potato is seldom housed as in this country, but kept in heaps or pits, out doors.

The Gardener's Magazine, is the title of a new Horticultural Journal, issued at Boston, by Mr. Wm. S. King, well known as one of the editors of the *Practical Journal* and *Journal of Agriculture*, and Secretary of the National Agricultural Society. He is determined to have his hands full; but he is a young man, full of life and energy, and as he says himself, prefers to *wear* out, rather than *rust* out. A long list (too long) of able contributors are announced, and among them they will undoubtedly make a good journal. The first three numbers, just received, look well. It is published monthly, at $1 per annum. Cheap, *cheap* — and we wish it success. We are glad to see Horticultural Journals on the increase.

Ohio Agricultural College at Oberlin. — We have received a circular, setting forth the objects and plans of this Institution, and take pleasure in commending them to public notice:

"The Object. — To place within the reach of Farmers, both old and young, the means o acquiring a thorough and practical acquaintance with all those branches of Science which have direct relations to Agriculture.

"Plan. — It is proposed to give Courses of Lectures during the winter months, on all the several departments of Agricultural Science, each principal division being assigned to a different Lecturer, and systematically presented in the same manner, as Medical Science is taught in Medical Colleges.

"Advantages of the plan. — It is adapted to meet the wants of the present as well as of the rising generation. It is proposed to occupy only the winter months, when the farmer himself, or his sons, may best spare the time.

It presents a view of the whole field of the Sciences connected with Agriculture, in the shortest period of time, and therefore makes their acquisition possible to multitudes who could not attend Universities, or even Schools on experimental farms.

"Subjects. — The branches taught will embrace whatever pertains to Animals, Vegetables, Land or Labor.

Lecturers. — *James Dascomb, M. D.* — Chemistry, in all its applications to Soils, Manures, Animal and Vegetable Life, and the Domestic Arts, &c.

Norton S. Townshend, M. D. — Comparative Anatomy and Physiology, with special reference to the feeding and breeding of Stock; History and Description of Domestic Animals in their several varieties; Veterinary Medicine and Surgery; Entomology.

John S. Newberry, M. D. — Geology and Mineralogy; Botany, Descriptive and Physiological with special reference to the history and habitudes of Plants cultivated in the Garden and Orchard, or in the Field — the various modes of Culture, and Soils adapted to each.

James H. Fairchild, A. M. — Natural Philosophy; Agricultural Mechanics; Farm Implements; Meteorology; Elements of Engineering and Land Surveying; Rural Architecture; Landscape Gardening, and Farm Book-keeping.

Additional Facilities. — A Reading Room, supplied with the principal Agricultural Periodicals, will be open to students at all hours. They will also have access to an extensive Library.

Terms. — For the entire Course, $40. Board and rooms may be obtained at $2 per week, exclusive of fuel and lights.

Letters of a business character may be addressed to Dr. J. Dascomb, Oberlin, Ohio.

Catalogues Received. — *Catalogue for* 1854, *of Fruit and Ornamental Trees, Vines, &c.*, cultivated and for sale by Isaac Pullen. at his nurseries, near Hightstown, Mercer county, New Jersey.

Answers to Correspondents.

What form of insect is the parent of the slugs so destructive to Pear and Cherry leaves? Is there any preventive for the nuisance? The dusting with ashes or lime, or drenching with tobacco water, to be effectual, must be repeated after every rain, if not more frequently, and where large and tall trees are affected, is but an imperfect remedy, besides being a very laborious one. Subscriber.

Prof. Harris describes the "Slug Fly" under the name of *Selandria Cerasi*, as follows: "The Slug Fly is of a glossy black color, except the first two pairs of legs, which are a dirty yellow or clay color, with blackish thighs, and the hind legs, which are dull black, with clay-colored knees. The wings are somewhat convex, and rumpled or uneven on the upper side, like the

wings of the saw-fly generally. They are transparent, reflecting the changeable colors of the rainbow, and have a smoky tinge, forming a cloud or broad band across the middle of the first pair; the veins are brownish. The body of the female measures rather more than one-fifth of an inch in length; that of the male is smaller. In the year 1828, I observed these saw-flies on Cherry and Plum trees, in Milton, on the tenth of May; but they usually appear towards the end of May or beginning of June. Soon afterwards some of them begin to lay their eggs, and all of them finish this within three weeks, and disappear. Their eggs are placed singly within little semicircular incisions through the skin of the leaf, and generally on the under side of it. On the fourteenth day afterwards the eggs begin to hatch, and the young slug-worms continue to come forth from the 5th of June till the 20th of July." They attain their growth in twenty-six days, leave the trees, and burrow in the ground. In sixteen days their transformation is completed, and they emerge from the ground in the fly state, and commence to lay eggs for another brood. We have not often, however, more than one brood in one season.

We know of no better remedy than dusting with lime or ashes, and this we admit to be somewhat difficult in the case of large trees. Among the nursery rows we use dry, fine earth, as we get it among the trees; and it answers the purpose.

THE August number of the *Horticulturist* is received, and your answer to a subscriber at Elkton, Todd Co., Ky., relative to some diseased Apple twigs sent you. I do not wish to be troublesome, but would be glad to hear further from you, relative to the disease known with you, as fire-blight. What we call fire-blight in the West, may differ from what is known as that disease with you. Is the wood as well as the foliage killed in fire-blight, as far as the disease extends? (1)

In the diseased trees, of which I sent you a specimen, the foliage alone is killed, although the wood, and sometimes the fruit, is covered with the same sorts of deposit. The wood does not appear to be injured by it, but remains plump and healthy, and with a firm belief that it was the work of an insect, I have put in thousands of grafts, which were covered with it at the time. The older and less thrifty trees are more liable to be attacked than others; of both the Apple and the Pear. However, I have noticed some exceptions to this rule. J. S. DOWNER, — *Elkton, Ky.*

(1) It is; and, as a general thing, the woody portion of the tree is affected with the disease, beyond recovery, before a leaf turns black. The first indication of the disease is often the sour smell which it emits, especially when a tree is first taken and is yet full of sap. It seems to operate principally on the newly-formed parts immediately under the bark. It spreads among the circulating fluids with great rapidity, so that a tree may in fact be *dead* without a leaf being withered or black. If the attack is discovered early, and the affected branch or portion of bark be cut cleanly and thoroughly out, leaving no trace of the disease, the tree will recover.— We have ourselves saved a large number of trees in this way; but if neglected a day, or in some cases a few hours, the disease becomes deeply seated, and the tree is in a hopeless case.— Sometimes, as the subject is more or less susceptible, the leaves turn black immediately; while in others, where a portion of the wood remains sound enough to keep up a sort of communication between the roots and leaves, the latter will remain green, or a sickly-looking green, for a whole season. In some cases trees recover without any aid. These are when the circulation of the fluids is very slow, as in old or stunted trees; the disease attacks a branch or portion of the tree, and expends its venom without affecting the principal channels in which the vital fluids circulate.

EVERGREEN HEDGES.—Will you please inform me of the best time and mode of trimming a Hemlock hedge which was set out about the 25th of May. It is not that its rapid growth demands any very vigorous pruning, but because it is so thin and straggling. A CONSTANT READER.

Let it alone till next spring, and shear it just before new growth commences. If your plants are small, they will thicken without much shearing; but if tall or thin, they will scarcely ever make a good hedge.

WILL you please inform me, through the *Horticulturist*, by what rule, in your opinion, one should be governed, in figuring any fruit to be placed before the public, as a representation of the fruit produced by any plant? Should the extra or largest fruits be selected, the average size, or what size? J. J. — *Boston.*

Our own rule is to select fair *average* specimens produced under *good* culture; the very largest, or the smallest would of course convey an erroneous idea of the fruit.

Inclosed I send you a couple of Cherries, also a short bit of its stock and a leaf. I think it will be something new to you. It grows wild here on the shores of Lake Erie. I have a few stocks of it in my garden, and have budded them with the Bigarreau. The buds look very fine, but I do not know how they may prove to be; but if they grow, I think they will make fine dwarf trees, for the stock never in its wild state grows more than six or seven feet high, and generally bears immense crops when only eight or ten inches high. It is called the Sand Cherry here, but what its real name is I don't know. If you can tell, I should be glad to learn. Those I send are very imperfect specimens on account of the drouth; their general size is about the size of the common pie Cherry in their wild state. Daniel Lee. — *Normandale.*

This must be the *Cerasus depressa* of Pursh, and *C. pumila* of Michaux. The common name of which is the "Sand Cherry." Its employment as a stock is well worthy of experiment.

I wish to propagate some Apple, Pear, Peach, Plum, Cherry Almond, and Quince trees, from cuttings. Please inform me when they should be cut from the parent trees; when they should be planted in the ground, how the ground should be prepared, how the cuttings should be managed during the growing season, whether watering and shading is necessary or not. What length cuttings should be cut, and how prepared for planting? Where do they emit roots, at the base or at the buds that are inserted under the ground? In short, give me an account of the whole mode of cultivation, from the time the cutting is removed from the parent tree until it has grown to a well rooted tree. A Constant Reader.

We regret we cannot comply with the very reasonable request of "A Constant Reader;" but, none of the trees mentioned, except the Quince, can be propagated from cuttings, and "*The Fruit Garden*" gives a much more complete account of their management than we could possibly here.

I have a piece of ground which is called Walnut soil with us. It is a deep, and very black soil, becoming loose when worked. I wish to know if such ground would be suitable for fruit, such as Peaches, Pears, and Grapes. I have also a lot of ground which is a heavy clay, mixed with gravel. Will this do for the Plum and Apricot? J. H. N

The "Walnut soil" will answer for Peaches and Grapes, if *perfectly dry* at all seasons. The gravelly clay is just what you need for Pears and Plums, and Apricots on Plum stocks.

(W. S. H., Galion, Ohio). Budding.—If you have failed to prepare your Basswood bark for tying buds, perhaps you can get *bass matts*; these, if new, sound, and well soaked in water, will answer. If this cannot be had, try coarse, strong woolen yarn. We have never tried Corn-husks. You want something that will fit close, and tie secure, to exclude air.

Grafting.—Do not use old roots, or pieces of roots of Apple trees; it is a most vicious mode of propagating fruit trees. There is no necessity for it, as good healthy seedlings are now abundant in all parts of the country. Root-graft only strong growers; bud the others on strong stocks.

Horticultural Societies, &c.

Massachusetts Horticultural Society.—The following is a list of the premiums awarded at the late Exhibition of this Society.

Prizes. — *Apples.* — For the best 30 varieties, of 12 specimens each, the Lyman plate, valued at $30, to Messrs. Burr, Hingham; for the second best, $20, B. V. French, Braintree; for the third best, $10, Josiah Lovett, Beverly. For the best twelve varieties of twelve specimens each, the Society's plate, valued at $20, B. V. French, Braintree; for the second best, $15, J. B. Moore, Concord; for the third best, $15, Messrs. Burr, Hingham; for the fourth best, $8, John Gordon, Brighton. For the best dish of Apples, twelve specimens of one variety, $6, James Guild, Roxbury; for the second best, $5, Francis Marsh, Dedham; for the third best, $4, John Gilbert, Hillsboro', N. H.; for the fourth best, $3, B. V. French, Braintree.

Pears. — For the best thirty varieties of twelve specimens each, the Lyman plate, valued at $30, to M. P. Wilder, Dorchester; for the second best, $10, Hovey & Co., Cambridge; for the third best, $10, Josiah Stickney, Watertown. For the best twelve varieties of twelve specimens each, the Lyman plate, valued at $20, Josiah Stickney, Watertown; for the second best, $15, Josiah Richardson, Cambridge; for the third best, $12, W. R. Austin, Dorchester; for the fourth best, $8, J. H. Stetson, Quincy. For the best dish of pears, twelve specimens of one variety, $6, Nahum Stetson, Bridgewater; second best, $5, Josiah Richardson, Cambridge; third best, $4, John Gordon, Brighton; fourth best, $3, J. A. Stetson, Quincy.

Assorted Fruit. — For the best basket of fruit of various kinds, $8, to M. P. Wilder, Dorchester; for the second best, $4, Azell Bowditch, Roxbury

Grapes. — For the best five varieties, two bunches each, $12, W. C. Strong, Newton; second best, $8, Mrs. F. B. Durfee, Fall River; third best $5, Charles E. Grant, Roxbury. For the best two varieties, two bunches each, $6, Thomas Page, Waltham; second best, $4, C. S. Holbrook, E. Randolph; third best, $2, J. Pritchard, W. Roxbury.

Peaches. — For the best dish of not less than twelve, $5, William Bacon, Roxbury; second best, $3, D. E. Jewett, Westboro.

Vase Boquets. — For the best pair suitable for the Bradlee Vases, a prize of the Bradlee plate, valued at $10, to Evers & Bock, Brighton; second best, $6, James Nugent, Jamaica Plain; for the best pair for the Society's Marble Vases, $10, Winship & Co., Brighton.

Parlor Boquets. — For the best pair suitable for the parlor, $8, to M. P. Wilder, Dorchester; second best, $6, Evers & Bock, Brighton; third best, $5, James Nugent, Jamaica Plain; fourth best, $3, Winship & Co., Brighton.

Pot Plants. — For the best display of not less than twenty pots, a prize of $12, to J. P. Cushing, Watertown; second best, $10, Thomas Page, Waltham; third best, $8, Azell Bowditch, Roxbury; fourth best, $5, M. P. Wilder, Dorchester.

Coxcombs. — For the best six pots, a prize of $3, to J. Kelley, Watertown.

Vegetables. — For the best display, and greatest variety at the Annual Exhibition, $10, to B V. French, Braintree; second best, $8, Henry Bradlee, Medford; third best, $6, Stone & Co.; fourth best, $4, John B. Moore. Mammoth Squash. — For the largest and best, the Society's Silver Medal, to Amos W. Stetson, E. Braintree; for the second best, $3, Messrs. Derby, Salem. Pumpkins.—For the largest and best, the Society's Silver medal, to T. McCarty, Roxbury; for the second best, $3, George Nelson, Lexington.

GRATUITIES.— *Peaches and Nectarines.*— George W. Willis, Chelsea, $3; Josiah Richardson, Cambridgeport, $3; Nahum Stetson, Bridgewater, $3; H. Y. Gilson, E. Cambridge, $2; E. C. Stevens, Dorchester, $2.

Baskets of Assorted Fruit. — E. M. Richards, Dedham, $2; W. A. Crafts, Roxbury, $2; Nahum Stetson, Bridgewater, $3; Misses Cordwell, Roxbury, $2.

Grapes. — William Blake, Jamaica Plain, $2; Joseph Breck & Son, Brighton, $5; W. C. Strong, Newton, $3.

Apples. — A. D. Williams, Roxbury, $10; Bowen Harrington, Lexington, $6; Samuel G. Hyde, Newton, $8; Josiah Stickney, Watertown, $6; W. R. Austin, Northern Spy, $3; John Parker, Acton, Blue Pearmain, $3; Josiah Richardson, Cambridge, Ribston Pippin $3; Levi Brigham, Saxonville, Nonpariel $3; E. M. Richards, Dedham, Gravenstein $3; Jas. Eustis, S. Reading, Gravenstein $3; Theodore Clapp, Dorchester, Gravenstein, $3; John Gordon, Brighton, Grand Sachem, $3; Josiah Stickney, Watertown, 20 oz. Pippin, $3; A. W. Withington, Dorchester, St. Lawrence, $3; Benjamin Bliss, Porter, $3; Peter Lawson, Lowell, collection, $5; Thos. Page, Waltham, do. $3; A. W. Stetson, E. Braintree, do. $7; C. S. Holbrook, E. Randolph, do. $3; Cheever Newhall, Dorchester, do. $3; John A. Kenrick, Newton, do., $3; James Eustis, S. Reading, do., $7; Evers & Bock, Brighton, do., $6; E. Winslow, Roxbury, do. $3; Eben Wight, Dedham, do. $6; Josiah Newhall, do. $3.

Pears. — George Southard, Roxbury, Louise Bonne, $3; Samuel Downer, Dorchester, fine specimens, $10; Samuel Walker, collection, $10; J. S. Cabot, Salem, do. $10; J. S. Sleeper, Roxbury, do, $5; Josiah Lovett, Beverly, do. $5; Winship & Co., Brighton, do. $5; William Bacon, Roxbury, fine specimens, $5; Henry Vandine, Cambridge, collection, $5; Robert Manning, Salem, do, $10.

Melons. — B. V. French, Braintree, $1; Nahum Stetson, Bridgewater, $3; Josiah Stickney, Watertown, $2; Galen Merriam, Newton, $1; A. D. Webber, W. Needham, $2; H. Bradlee, Medford, $2.

Pot Plants. — Winship & Co., Brighton, $8; Evers & Bock, Brighton, $5; Geo. W. Colamore, Boston, $2; Mrs. Gorely, $1; Moses B. Williams, Brookline, $5; M. P. Wilder, Dorchester, $5; J. Mason, Cambridgeport, $1.

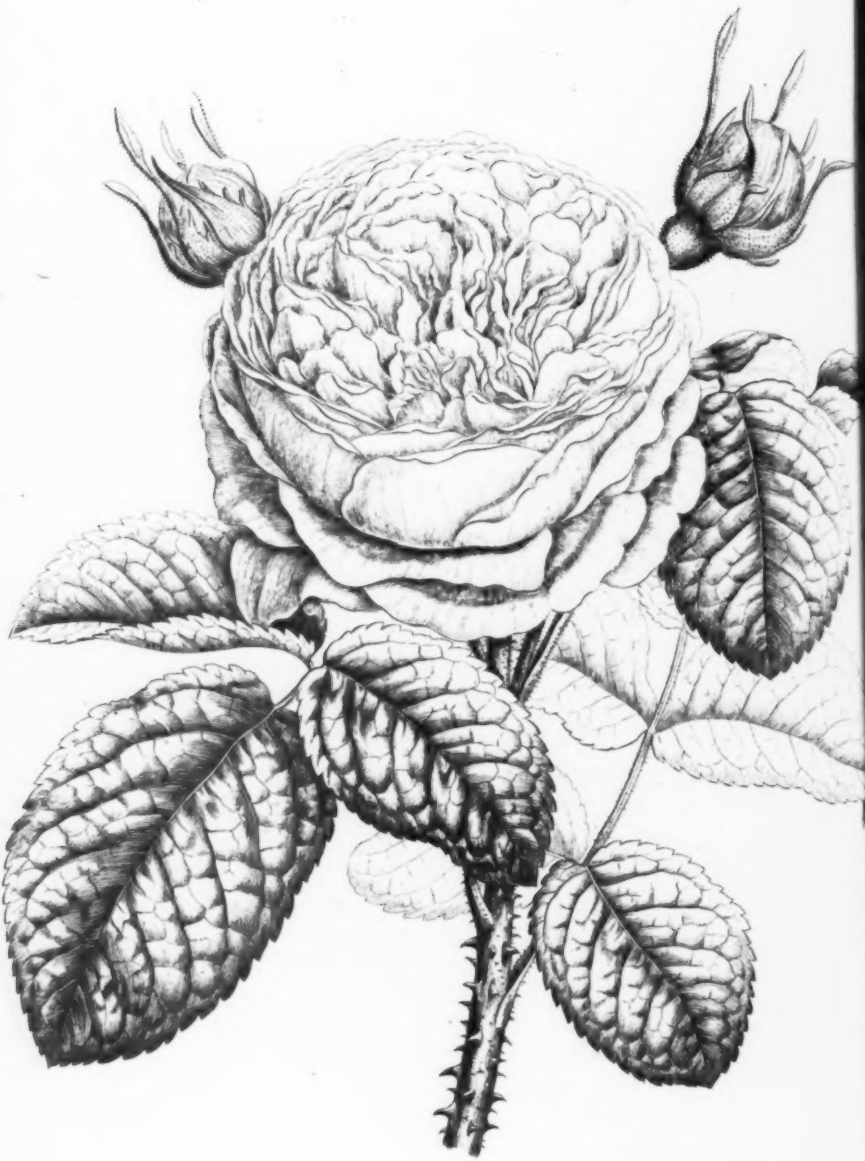
Floral Designs. — Mrs. William Kenrick, Newton, $5; Miss F. A. Russell, Newton, $2; W. C. Strong, Newton, $7; do do $1; Miss Fannie Wight, Dedham, $5; Curtiss & Lincoln, Boston, $6; Miss Mary M. Kenrick, Newton, $3; Azell Bowditch, Roxbury, $8.

Boquets. — William E. Carter, Cambridge, $2; C. S. Holbrook, East Randolph, $2; Messrs. Burr, Hingham, $4; Jonathan Morris, Newtonville, $5; Master A. G. Read, Boston, for basket artificial flowers, $2.

Vegetables. — For fine display — John Gordon, Brighton, $2; Josiah Crosby, W. Cambridge, $3; Nahum Stetson, Bridgewater, $4. Davis Seedling Potatoes, display — H. L. Shattuck, Concord, $2; A. Bowditch, Roxbury, $5 Josiah Stickney, Watertown, $4; S. B. Pierce, Dorchester, $2; C. S. Holbrook, E. Randolph, $2. Sea Kale, display: James L. Little, Swampscott, $1; Timothy McCarty, Roxbury, $3; James Nugent, Jamaica Plain, $3. Squash.— Winship & Co., Brighton, $2. Hybrid Squashes. — A. W. Stetson, E. Braintree, $10. Corn, display. — Messrs. Burr, Hingham, $2; Bowen Harrington, Lexington, $4; A. D. Williams, Roxbury, $4; Galen Merriam, Newton, $4; A. D. Webber, Needham, $4. Lima Beans. — Samuel Jordan, East Stoughton, $1. Potatoes, display. — James Hyde & Son, Newton, $8; A. R. Pope, Somerville, $2. Celery. — Bowen Harrington, Lexington, $2. Potatoes, (Davis), J. B. Moore, Concord, $2, Squash, collection. — E. M. Richards, Dedham, $1; George R. Sampson, Roxbury, $2. Tomatoes. — Peter Lawson, Lowell, $1. Potatoes, (new). — B. V. French, Braintree, $2. Summer Squash. — Henry Bradlee, Medford, $3.

THE Fall Exhibition of the Genesee Valley Horticultural Society was held on the 21st and 22d of September. The show of Fruit, particularly Pears, was very fine. The exhibition of Flowers was not equal to some previous shows, in consequence of the extreme drouth of the summer and fall.

We have received notices of several exhibitions, which took place late in September, which we shall give in our next.



CAROLINE DE SANSEL.